

Mac FORMAT



FOR ALL YOUR
APPLE NEEDS
— for years —

Apple's new lineup!

OS X El Capitan, iOS 9 and watchOS 2 – get the lowdown on all the amazing new features

PLUS

New 5K iMac & MacBook Pro reviewed



Apple Music is here!

Get free music with the new streaming service



Create a photo album

Use Photos for OS X to print a stunning book



Master text styles in Pages

Get professional results in just a few minutes!



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Welcome

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4 August

to MacFormat, the UK's best-selling Apple magazine



Whatever Mac you've chosen, you've opted to make a serious investment. It will, of course, pay off because your Mac is reliable, stable and stands the test of time far better than most other computers. We could all do with some things to be cheaper though. Better still, free! The software world can be a hard thing to keep track of, and expensive if your interests are wide-ranging. It's not for us to quibble over seemingly expensive programs – that's a matter for their developers – but the notion that free stuff is less good is just nonsense. So in this issue we've compiled the latest and greatest free apps for OS X, from the Mac App Store and further afield, and explain why you should try them. We've also picked out amazing free upgrades to paid-for software that comes at a very reasonable cost.

It's been yet another busy month for Apple, and this year's WWDC brought big changes to OS X, iOS and watchOS, along with the long-awaited Apple Music streaming service. Read our analysis of the announcements, starting on page 20.

We've also put the new Retina 5K iMac and MacBook Pro through their paces. Talking of paces, find out how to get fitter with Apple Watch on page 74!



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APPLE TALK Have your say about Apple issues

➤ The section of the mag where you get the chance to speak your mind on everything Apple-related **p62**



RATED Discover the best apps and kit

➤ Read our verdict on the latest hardware and software for Apple devices, including games and iOS apps **p81**



UPGRADE! The best Macs and iOS devices

➤ If you're looking for a Mac, iPhone, iPad or Watch, check out our Upgrade section before you buy **p107**



The best FREE Mac apps!

Never pay for essential software again with these powerful alternatives to big-name OS X apps



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Huge power, great connectivity **p84**



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A real-world colour picker! **p85**



Boom 2

Make more of your Mac's speakers **p95**



Marcato

Privacy-based browser wrangler **p105**

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Apple *We round-up the Apple stories that matter to you* WORLD



Faster than a speeding bullet

Mac
FORMAT
**THE BIG
STORY**

Thunderbolt 3, with its versatile USB-C connector, will go like greased lightning

Chip giant Intel has confirmed that its latest high-speed data transfer standard, Thunderbolt 3, will use the same USB-C connector as used by USB 3.1, but will be much, much faster.

"For the first time, one computer port connects to Thunderbolt devices, every display and billions of USB devices," Jason Ziller, Intel's director of Thunderbolt marketing, said.

Thunderbolt 3 can transfer data at a whopping 40Gbps (gigabits per second), twice as fast as Thunderbolt 2, which was introduced in 2014 and eight times faster than the MacBook's sole first-gen USB 3.1 port. This means you can transfer a 4K movie in just 30 seconds using Thunderbolt 3. The ports also incorporate support for cheaper 'passive' Thunderbolt cables that operate at a reduced rate of 20Gbps.

Jointly developed by Apple and Intel, Thunderbolt was first introduced in the 2011 MacBook Pro. Apple's recent introduction of a MacBook equipped with a single USB-C port generated concern that the company was

abandoning the faster standard. "As long as we were going to include a port for charging the new MacBook, we wanted to make sure it was the most advanced and versatile one available," Apple said at the time.

The true versatility of this was easier to understand following Intel's announcement of plans to adopt USB-C connections for Thunderbolt 3. You'll be able to distinguish a Thunderbolt 3 cable from a standard USB-C cable by the little lightning logo on the connector. As the unified Thunderbolt 3 port standard won't arrive until later this year, the already-released 12-inch MacBook is unlikely to support the new specification – although what an announcement that would be.

Other than significantly faster speed, Thunderbolt 3 allows for two 4K 60 Hz displays and quick notebook charging using a single cable. Intel calls this, "the most advanced and versatile USB-C docking solution available". Of course, to attain Thunderbolt 3 performance you'll need to be using compatible devices

"For the first time, one port connects to Thunderbolt devices, every display and billions of USB devices"



What we're most excited about

Gadgets and gizmos **p14**



Think different

The incredible dancing fire speaker. No, really... **p16**



One more thing

Gary Marshall on Apple's chief design officer **p18**



WWDC 2015

Your guide to the features in OS X El Capitan **p20**

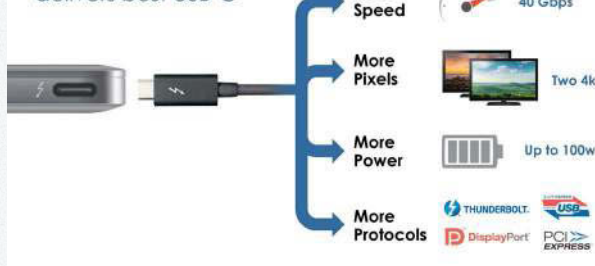


WWDC 2015

Multitasking, money and more in iOS 9 **p25**



Thunderbolt™ 3 delivers best USB-C



With up to 100w of power available (the current MacBook Pro draws 85w from its charger) USB-C is poised to supply more energy to more Apple products than just the 29w drawn by the 12-inch MacBook

plugged into the right Thunderbolt ports using the right Thunderbolt cables. You will be able to plug USB Type-C cables directly into the Thunderbolt 3 port, or a Thunderbolt 3 cable into a USB port, though data will be transferred only at USB speeds in these situations.

For most Mac users USB 3.1 is good enough to support most common peripherals, such as printers, scanners or hard drives. Thunderbolt is an excellent choice for data intensive activity. Cheaper to deploy, USB already has a strong market – June's Computex show in Taipei saw dozens of USB-C products introduced. In contrast, even four years on only around 250 Thunderbolt-compatible peripherals exist. The move to standardise around the new interconnect should help boost adoption, Intel spokesperson Dan Snyder said, telling Wired: "We expect the Thunderbolt 3 solution cost to support broader adoption in the industry".

Mac users who might have recently invested in Thunderbolt and Thunderbolt 2 peripherals and cables aren't being left out to dry as Intel is developing cables and adapters so old Thunderbolt peripherals can use Thunderbolt 3.0 ports. Native Thunderbolt 3 devices are expected to start shipping later this year.

It's only a matter of time before we see USB-C ports appear on more Macs, and Intel's move to standardise around USB-C interconnects means new Macs will be capable of supporting both USB-C and Thunderbolt 3 using a single cable – and can look forward to fewer cables cluttering their desks.

Apple in QUOTES

What are people saying about the world of Apple?

Phil Schiller

www.apple.com

"I want an Apple that's bold and taking risks and being aggressive."

Apple's marketing chief wants a fight.

Marc Newson

www.apple.com

"We will start to see more technology embedded in garments, magic woven in."

Apple designer talks wearables.

Jeff Williams

www.apple.com

"If you stacked all iPhone 6s sold during the last holiday quarter, it would be higher than the International Space Station."

Apple's senior vice president, operations, says how it is

Bob Lefsetz

www.lefsetz.com

"The customer doesn't want Apple Music, doesn't need Apple Music, and the hardest problem facing musicians is getting people to listen to their tunes at all, not getting paid"

Renowned music blogger doesn't get Apple Music

Rumour ROUNDUP

The top 5 Apple stories we're talking about

01

Human touch

Apple is hiring a team of journalists to help curate its recently announced Apple News service, offering a real alternative to Google.

02

iPhone 6s camera

Apple is reported to be acquiring large quantities of high-end camera sensors, suggesting the iPhone 6s will be a photo star.

03

Made in India

Taiwan-based Apple supplier Foxconn is in talks to build iPhones, iPads and iPods using new factories based in India, a report claims.

04

iPad Pro

Developer claims iOS 9 contains a new keyboard that only makes sense on a larger display – could this be the long-rumoured iPad Pro?

05

Apple Streetview

Apple support confirms it has a fleet of vehicles collecting imagery for its own equivalent of Street View in Apple Maps.

Apple Insider

Our industry expert rounds-up the biggest Apple corporate stories circulating this month



Privacy matters

Apple CEO, Tim Cook, slammed rivals Google and Facebook for their laissez-faire attitude to user privacy during a speech to the EPIC Champions of Freedom event in Washington this June. Cook rejected "incredibly dangerous" government attempts to demand backdoors into Apple's systems. He also spoke out against the big internet firms who offer services in exchange for personal information. "We believe the customer should be in control of their own information," he said. Apple's commitment to privacy and security was in full focus at WWDC, where it announced several measures to boost this, including support for 'self-destructing' iMessages.



Apple continues to weave new privacy features into iOS 9 – essential as your iPhone becomes your wallet.

Is Jony Ive leaving Apple?

Apple has promoted Sir Jony Ive to a new position, Chief Design Officer. Ive remains responsible for the design of all Apple products, but has also been made responsible for the look of retail stores and even the furniture in the new corporate HQ.

Ive's daily managerial responsibilities have been transferred to UK designer Richard Howarth (now Vice President for Industrial Design), looking after hardware, and Alan Dye (now Vice President for User Interface Design) who takes over software. The removal of Ive from day-to-day-managerial responsibilities has, however, generated wide concern that the Brit-born designer is slowly transitioning away from the company, but nothing has been announced on this.

Sexism sucks

Apple's WWDC saw more women take the stage than ever before as Apple increased its attempt to encourage more women into technology jobs. Tim Cook told Mashable, "I think the most diverse group will produce the best product." Apple is working on outreach efforts to attract female engineers and people of colour to the company. "I think in general we haven't done enough to reach out and show young women that it's cool to do it and how much fun it can be," he said.

Stock watch

Clem Chambers, CEO of ADVFN, the leading stocks & shares website



➤ Apple has been scaled back as a constituent of the NASDAQ stock market because it was dominating the index, threatening to make it just a function of Apple's success... or otherwise.

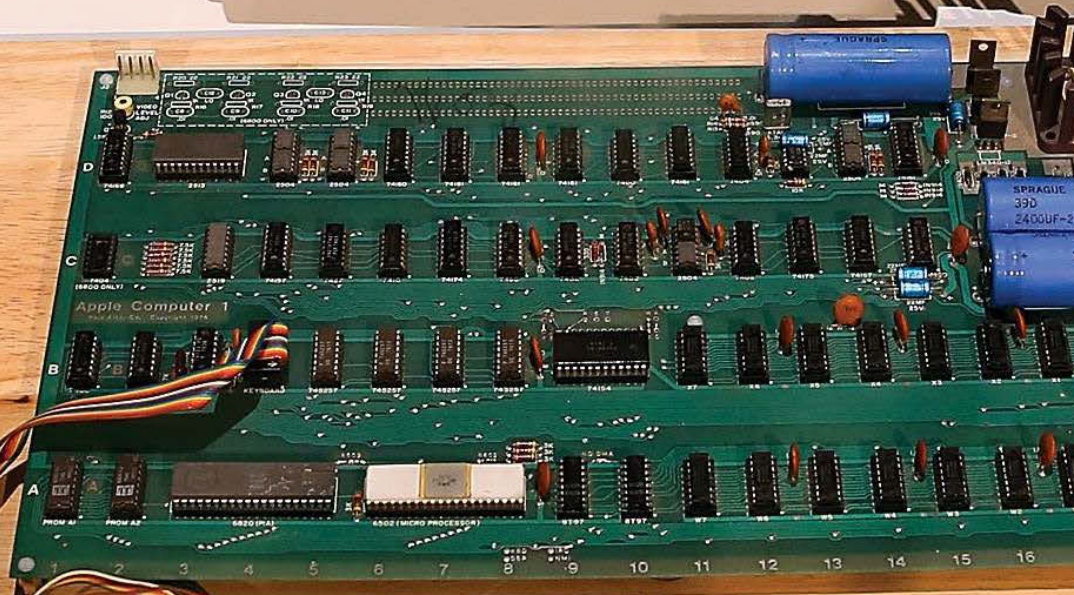
This was a sensible move, but if they had left the Apple weighting alone the NASDAQ would be well over its current

5,000, maybe closer to 6,000. In a sense, the NASDAQ has been banking Apple profits rather than running them.

Back at Apple, music is about to stream. Downloading tracks for a dollar is looking old hat and Spotify, which streams music to its subscribers' hearts' content, is to be challenged head on by Apple Music.

No band will ever again be able to blame record companies for crushing their hopes and creativity. With Beats Connect, GarageBand and a few bucks, a world of music distribution is available to all, most trail blazed by Apple. And that distribution just got wider.

The music industry is dead, long live the music industry.



Apple in PICTURES

The hottest pictures from the world of Apple



Have you got one of these in your attic? If you stumble

across one, don't do what one Silicon Valley resident did and put it out to be recycled. The Apple I, worth up to £250,000, was dumped by a woman cleaning out her house after the death of her husband. The recycling firm sold it, and now wants to split the profits with her.

Picks from THE STORE

*We select the best apps
& games out there*



On our APPLE TV

What we're watching on
the iTunes movie store



FILM Whiplash

£13.99, rent for £4.49

➤ Ambitious young drummer Andrew Neyman is pushed to the brink of insanity by his talented yet terrifying teacher, Terence Fletcher. This incredibly intense drama is well worth watching.



TV Vikings

£2.49 per episode

➤ This award-winning drama from the History Channel will suck in any Game of Thrones fan with excellent scripts, intense performances and the utterly compelling story of Ragnar Lodbrok and his clan.



AFFINITY DESIGNER

£29.99 Developer Seriflabs, affinity.serif.com Requires OS X 10.7 or higher



Winner of an Apple Design Award at WWDC 2015, Affinity Designer is a beautifully powerful graphics design app for the Mac that's mainly for creating and editing vector graphics but can open pixel-based images too. "This is an excellent example of what a state-of-the-art Mac app should be," Apple explains, pointing out that the 64-bit software takes full advantage of OS X technologies like OpenGL, Grand Central Dispatch and Core Graphics. The application also supports tablets and the Force Touch trackpad, so you can use it to draw and paint with a degree of pressure sensitivity.

The user interface is highly intuitive and contextual, which means that not only are the tools you need are easy to find, but those available to you will change to reflect what you are trying to do, speeding up productivity. The powerful feature set also includes flexible layer management, adjustment layers, vector blend modes and an impressive range of high quality raster tools for finishing. The saveable undo history means you can step back through edits from any session.

Additional features include live panning and zooming at 60fps, over one million percent zoom so you can work on the finest detail without a loss in quality, and much more. We love it so much we decided to bring you a whole series of expert tutorials on how to use it. Turn to page 50 for part two on mastering brush tools.



“This is an excellent example of what a state-of-the-art Mac app should be,” says Apple



PLUS
CHECK OUT OUR
MASTERCLASS
ON AFFINITY
DESIGNER ON
p50

On our PLAYLIST

What's on the office speakers



MUSIC Muse, Drones £9.99

➤ Straight in at iTunes number one the moment it was released, Muse's seventh release sees a return to a more stripped back, less embellished rock sound. The 12-track album is a concept piece built around the dehumanisation of drone-based warfare in which it is possible to commit atrocity at a distance without feelings of responsibility.



PODCAST The Talk Show With John Gruber Free

➤ The Talk Show with John Gruber featured a live chat with Apple VP marketing, Phil Schiller. It's also worth a listen on a weekly basis, as this leading US Apple rumourist speaks with some of the better known observers of the Apple industry concerning the matters of the day.

Out There Omega Edition

£7.99 Developer MacPlay, macplay.com
Requires OS X 10.7 or higher



This slightly dark space exploration game blends resource management into a struggle for the future of the galaxy. As an astronaut just emerging from stasis, you need to survive, explore and thrive in a new part of deep space. You'll meet intelligent alien species and must grapple with ancient powers that are connected to the fate of humanity.

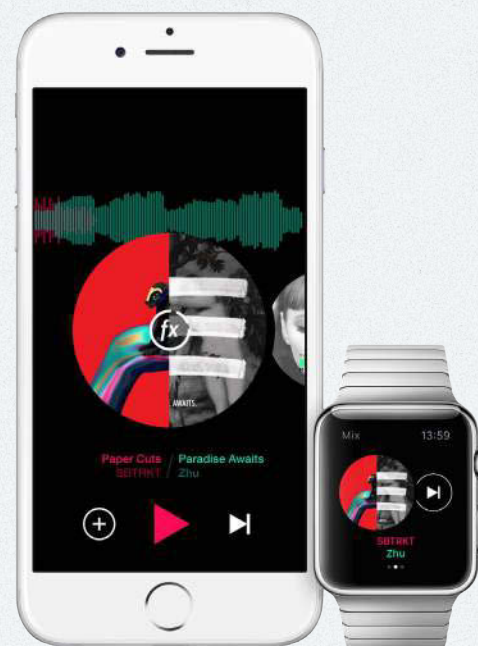


Fallout Shelter

Free Developer Bethesda Game Studios, bethesda.com
Requires iOS 7.0 or higher



As the overseer of one of the post-apocalyptic RPG series' vaults, you're tasked with increasing the population, making them happy and protecting them from threats as well as adding new facilities to the vault and exploring the nuclear wasteland outside. For two days during launch week it was earning more than Candy Crush Saga!



Pacemaker

Free Developer Pacemaker Music AB, pacemaker.net
Requires iOS 8 or higher



Pacemaker is a cool music mixing app for iOS – simply choose some tracks from iTunes or Spotify and the software will reshuffle them into a perfect mix using its Match Machine technology. Alternatively, you can use it to hand-mix your own tracks using the built-in track tempo, volume and effects tools. Pacemaker for Apple Watch tells you when the current playlist is about to end so you can pick a new collection, or ask it to pick a playlist for you.

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GADGETS

Hot gear on the horizon... what's got us excited?



WE'RE MOST EXCITED ABOUT...

NINEBOT ONE E+

\$950 (about £625) ninebot.com

It's what Segway could have been, if it hadn't been adopted by the socks-and-sandals crowd

⬆ What is it? With its fancy blue, black and white styling, the Ninebot

One E+ looks like something straight out of *I, Robot* (minus the overbearing product placements). But no, apparently it's actually a 'self-balancing scooter', a single-wheeled transport device that can reach a decent 22km/h and travel up to an impressive 35km on a single charge.

When's it due? It's scooting around now

Why are we excited? It looks über-futuristic and the tech inside seems pretty impressive too. In theory, it's a superb way to make short, traffic jam-dodging, urban journeys and one video even shows a rider using it while balancing on one foot. We're tempted to think it's exactly what Segway could have been, had it not been adopted by the socks-and-sandals crowd. And Gob in *Arrested Development*.



WonderCube

From \$69 (about £45) thewondercube.com

What is it? The little WonderCube combines (deep breath) a Lightning charging and syncing connector, a flash memory port, a phone stand, an LED torch and emergency 9V battery-powered charger, plus a keyring attachment – all that within a tiny box measuring just one cubic inch.

When's it due? Shipping autumn 2015

Why are we excited? The trend of banishing surplus peripherals continues (diligently observed by the new MacBook, of course). Who needs to carry around six devices and cables when all you need is one WonderCube? After all, it's still much cheaper than Apple's USB-C multiport adapter...

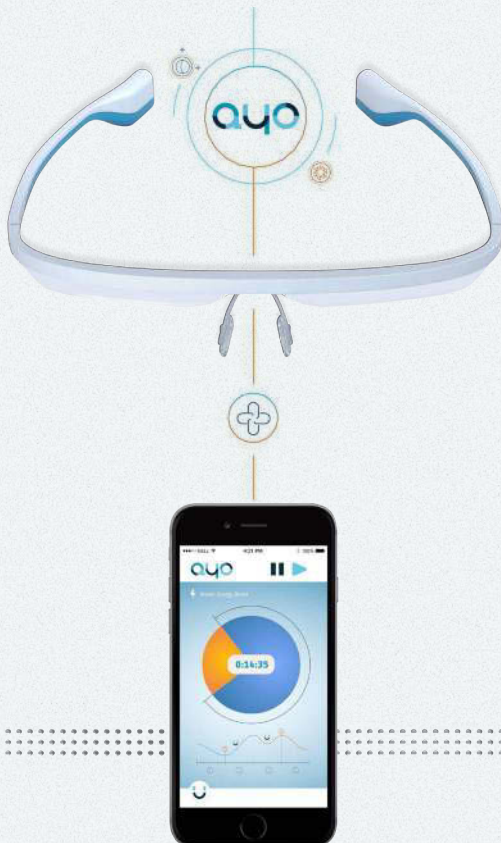
Ayo

From \$299 (about £195) novalogy.io

What is it? The Ayo is a headset that uses a 'special lighting solution' to solve travel-related tiredness. It adjusts your hormone levels to help you sleep better and feel less jetlagged – without taking a slew of questionable pills and potions.

When's it due? Shipping December 2015

Why are we excited? It sounds like something you'd shout about to gain attention, but the Ayo will turn heads without you needing to say a word. Sorting out your sleep in just 20 minutes? It's what frequent flyers have been, er, dreaming of.



AfterShokz Bluez 2

£90 aftershokz.co.uk

What is it? Another headset, the AfterShokz Bluez 2 are in fact bone conduction headphones. That's not as scary as it sounds – they work by transmitting sound through your cheekbone and into your inner ear.

When's it due? Available now

Why are we excited? The technology in the AfterShokz will protect your eardrums, for one thing. More interestingly, it has the potential to bypass certain forms of hearing loss, such as those affecting the eardrums. That makes this a potentially life-changing headset, as well as a stylish alternative to big bulky cans.



Gramofon

\$79 (about £60) gramofon.com

➔ **What is it?** Want a multi-room speaker setup but can't afford a Sonos system? Gramofon aims to do this by offering a connected, multi-room audio system for under £60. That's music to our ears (sorry).
When's it due? Available now
Why are we excited? Aside from offering Wi-Fi streaming (more stable than Bluetooth) and integration with both your devices and numerous cloud services, Gramofon enables you to connect up your home audio for a very affordable price. It looks pretty tasty, too. Sonos, watch your back.

Think different

Decidedly off-the-wall



Sound Torch

From \$167 (about £110) thesoundtorch.com

➔ **What is it?** Love fire? Love music? Wish they could be combined in some way? Step forward the Sound Torch, a speaker that syncs a flameboard to the pulse of your music. Yes, actual fire dancing to your tunes.
When's it due? Available December 2016
Why are we excited? It's genuine insanity. What could possibly go wrong when you combine a crowded nightclub or house party full of drunken loons and a flaming speaker? The inventors say they've put rigorous safety measures in place, but we're still pretty sure this is Not A Good Idea. Although we do really want one.

Hub+

\$99 (about £65) nonda.co

➔ **What is it?** Shiny new MacBook? Check. HDMI slot? Err... Thunderbolt slot? About that... Mini Display Port? Nope. Solution? The Hub+, brings back all the ports from the MacBook Air and MacBook Pro, plus a few extra.
When's it due? Available now
Why are we excited? It's a fantastic way to restore functionality to the new MacBook – three USB 3.0 ports, two USB-C ports, one Mini Display Port and even an SD Card reader. And if that wasn't enough, it can also act as a power bank for your iPhone, all while being small enough to fit in your pocket.



QromaScan

\$60 (about £40) qroma.net

➔ **What is it?** The QromaScan is a portable scanner that features some rather clever voice tagging technology, all while folding up to the size of a hardback book. It can add metadata to your photos simply by you telling it the date, location and people in the photo being scanned.
When's it due? Snap one up now
Why are we excited? Previously your choices were to manually add metadata to your photos, or ignore all that but risk searching through heaps of unsorted photos a few months later for that one nostalgic holiday snap. The QromaScan should mean a more organised photo library, quicker scanning and fewer torn-out clumps of hair.



DAVINCI RESOLVE 12

Now you can switch to the world's best editing software for free!

Only DaVinci Resolve 12 combines professional editing with advanced color correction so you can edit and grade from start to finish, all in one single software tool! With over 80 incredible new features including multicam editing, advanced trimming, high performance audio, and incredible media management, DaVinci Resolve 12 is the editing solution you've been waiting for.

Super Fast Editing

DaVinci Resolve 12 has a massive set of professional editing and trimming tools that work exactly as you expect. You get context sensitive editing, dynamic and asymmetric trimming, titling, transitions, animation and more! The familiar multi track timeline, customizable interface and keyboard shortcuts make it easy to switch to DaVinci Resolve 12.

Incredible Multicam

No matter how many cameras you have on your shoot, DaVinci Resolve 12 lets you edit programs shot on multiple cameras faster than ever before. Quickly sync angles using timecode, in/out points, or even automatically based on sound and then watch them all playback in realtime while you cut between angles on the fly!

Unlimited Audio Effects

Now you can create the perfect mix by adding VST and Audio Unit plugins to entire tracks or individual clips! Resolve's sample accurate playback and smooth tape style scrubbing let you precisely edit audio in the timeline, or you can record fader automation using the new mixer! You can even export directly to ProTools for finishing!

Hollywood's Best Color

DaVinci is the world's most trusted name in color and has been used to grade more Hollywood films, TV shows, and commercials than anything else. Now you can switch between professional editing and Resolve's legendary color tools with a single click. DaVinci Resolve 12 goes far beyond anything you'll find in any other editing systems!

DAVINCI RESOLVE 12

Mac OS X • Windows • Linux

Available in July



One more thing...

SOME LIKE IT HOT

Jonathan Ive shows the problem with promotion: it takes you away from the things you love



Jonathan Ive's promotion to Chief Design Officer has got Appleologists in a tizzy. Is the newly created position the beginning of the end of Ive's time at

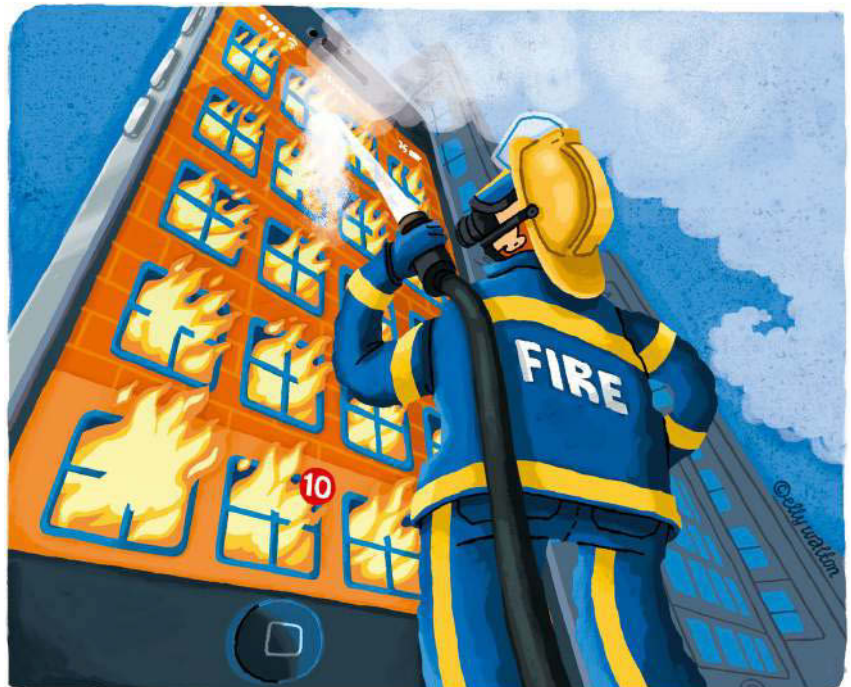
Apple, or has he become the spiritual successor to Steve Jobs, the new keeper of the Apple flame? Will he move to England and try to do everything via iCloud? Is he going to give up on designing things and swan about in gold-plated Bentleys with his designer pals, listening to Pitbull and quaffing Courvoisier?

Me, I think Ive wants to be a fireman again.

Imagine. You've been fascinated by fire your whole life. You understand its power, its terrible beauty. You know its secrets, can hear its beats, can predict its movements in a way no other firefighter can. And because of this, because of this talent, people respect you. And because of that respect, they promote you. You become crew leader, then watch manager. Manager of the area, the group, the brigade. You're still a firefighter, but the fires you fight now are metaphorical.

It happens in all industries. Journalism. Industrial design. Teaching. People with talent are pushed upstairs, their time increasingly packed with meetings and management. It's important, of course, but it

By jettisoning the management to concentrate on the magic, Ive gets to be a fireman again



isn't what they dreamed of doing, what they studied and sacrificed for. What they love.

I wonder if that happened to Ive.

We know design runs through his bones like the word Blackpool through a stick of rock. He notices everything, cares about the smallest detail, gets irate about things most of us wouldn't even notice. But the more you have to oversee, the less time you can spend on the little things.

As his portfolio expanded to take in not just computers but mobile, not just hardware but software, not just core products but wearables and Apple Stores and Campus 2 and maybe even cars, was Ive stretched too thin? Was he spending too much of his time being a manager instead of being a magician?

Tim Cook isn't telling and Ive is keeping characteristically quiet, but Apple might just have dodged a bullet. As Steve Jobs once said to Cook, "I've never found in my whole life that you could convince someone who doesn't want to work hard to work hard."

Ive doesn't need to work, and he certainly doesn't need the money, but I think Apple needs him – and it needs him on top form, not bored and going through the motions. By jettisoning the management to concentrate on the magic, Ive gets to be a fireman again.

Some people turn out to be great managers. Gary Marshall isn't one of them. "It's not that I'm not creative," he says. "I'm just crap."

Run your own personal cloud from the comfort and security of your home



DS215j features a dual-core CPU, supports up to 12TB of data and consumes less than 14w when active while the DS115j offers a stable storage environment for users with no need for raid, consuming less than 11w when active.

Synology NAS' and the intuitive DiskStation Manager (DSM) software allow users to sync and share files among multiple devices, including Windows PC, Mac, Linux, iOS, Android and Windows Phone.

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Welcome to OS X El Capitan



The next version of OS X shares its name with a famous rock formation within Yosemite national park. Think of El Capitan being to Yosemite as Snow Leopard was to Leopard: similar on the surface, but with a strong focus on improving the performance of your Mac (El Capitan will run on the same hardware as its predecessor). However, performance hasn't been Apple's sole focus for this version. It also says that your experience of using a Mac to get things done will improve. In fact, there's much cause for excitement, especially if your

Mac is more than three years old at this point, in which case you might have been disappointed that major features of Yosemite – Handoff and cross-platform AirDrop with iOS – aren't available to you. The features demonstrated at WWDC included many small, useful tweaks that should reduce, or even remove, long-standing frictions of working with a Mac.

Chief among the improvements is a dramatic simplification for working with two apps side-by-side, which we talk about on page 22. Between that and Safari's new features, it feels like Apple is finally getting around to

dealing with very real frustrations in OS X. The Safari web browser at last gives you the power to mute noisy pages, and to do so selectively so you don't miss out on cues from web apps. When a site is emitting sound, its tab and the Smart Search Field both display a speaker icon. The one in the Smart Search Field serves as a master volume control for all tabs, with options to mute all tabs or specific ones – a useful degree of control if you use web apps that use sound to inform you of things like the arrival of new messages or a meeting request.

It's easier to keep websites and web apps you depend upon to hand. All you need to do is drag a tab to the left of the tab bar, which reduces it to a smaller tab bearing just the site's icon. Pinned sites remain in place even after you close and then reopen Safari.

Safari also works better with AirPlay in those moments when you want to stream a video – handy at home on the sofa and especially in presentations where you might not want people to

It feels like Apple is finally getting around to dealing with very real frustrations in OS X

Words: Alex Blake, Christian Hall, Craig Grannell, Alan Stonebridge Images: Apple

WWDC 2015: The inside story

At its latest developer conference, Apple played down expectations for new features in its forthcoming operating systems, which will run on all the same devices as their predecessors. However, there's a lot to get excited about...



see everything else that's on your screen. Apple says you only need to click the AirPlay icon that appears on compatible videos, by which we expect it means of the HTML5 variety; don't expect to use this on sites that haven't moved with the times. Relegated to a bullet point in Apple's keynote, the font used by the elegant Safari Reader feature is now customisable.

In recent versions, OS X has adopted elements of iOS – the Share menu, Notification Center and the Photos app among them. El Capitan's version of Mail continues this shift towards consistent behaviour so that you can

With Safari in El Capitan you can, at last, mute those annoying noisy web pages.



easily move between Macs and iOS devices. Rather than having to get into the mindset to use keyboard shortcuts, or move the pointer between the message list and the toolbar, you can simply swipe rightwards on a message to mark it as unread, or leftwards to trash it. This appears to make triaging your mail much quicker, though there's still the issue of building up

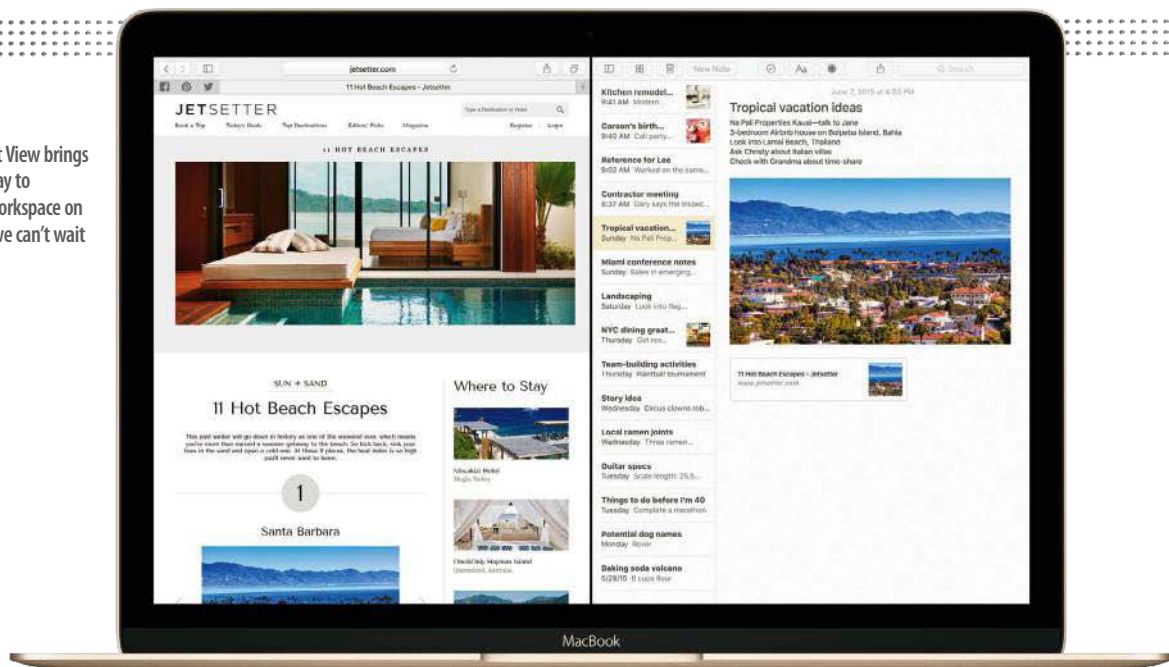
muscle memory to swipe using more fingers when doing this on a Mac.

Apple's making a big deal about new fonts and input methods for its customers in China and Japan, but our cousins in the east aren't alone in getting typographic treats. One of El Capitan's subtler changes is a new system font, just one year after Helvetica Neue ousted Lucida Grande. In fact, iOS and watchOS will also feature variations of the San Francisco font family found in OS X. Currently, Apple has made beta versions of them available only for developers. In the meantime, you can watch a WWDC video that explains the new font's design: <http://bit.ly/mfwwdcfonttalk>.

Try it yourself

A public beta of OS X El Capitan will be available from July, and for the first time Apple will make a public beta of iOS available too. Sign up for the programme at <http://apple.co/1J7VtEt>. However, it's best to install on a truly spare device, or at least another hard drive in OS X's case.

El Capitan's Split View brings a whole new way to manage your workspace on your Mac, and we can't wait to use it fully.



Window management

At last, Apple delivers a modern way to get your windows under control with El Capitan's new Split View

Getting windows exactly where you want them has long been a bugbear in OS X. Apple's best solution to date was to make windows resizable from any edge or corner, leaving plenty of room for tools such as Moom (see our tutorial in *MF288*) to offer more powerful window management features. Yet for years now, Microsoft Windows has made it easy to quickly make apps fill specific regions of the desktop without having to buy additional software.

At last, El Capitan adds something similar, and it works in a fluid fashion that you'd expect of OS X. You can split two apps between the left and right halves of the screen by clicking and holding on a window's green button and dragging to either side of the desktop. When you let go, your other windows arrange themselves, Mission Control-style, in the other half, waiting for you to click the one you want to fill it. The method for starting this sequence is a little tucked away, but at least you're unlikely to trigger it by accident, and it shouldn't interfere with OS X's existing shortcut for moving windows between workspaces by dragging them to screen edges.

With the screen split between two apps, dragging the dividing line between them adjusts how much of the screen is apportioned to each. If one of your apps is already in full-screen mode, you simply drag another window to the top of the screen to open Mission Control, then drop it onto the existing workspace to split that workspace between the two apps.

These neat shortcuts may be sufficient for most people, but they still leave room for apps such as Moom to offer personalisation. It's also possible to set the menu bar to hide, like you already can for the Dock, to free up screen space. Even with these tools available, you might lose track of the pointer, so you can shake it around to make it temporarily grow bigger and help you spot it. Gimmicky? Well, who hasn't done that at some point!

On the subject of full-screen apps, to date Mail has worked poorly when working that way because its composition panel got in the way of your other messages. In El Capitan, when you click outside of the panel it slides to the bottom of the screen for you to access other messages, and you can click on the panel or drag things onto it to bring it back into focus. The panel also supports tabs so you can compose several messages at once.

Spotlight gets smarter

Spotlight in El Capitan gains the intelligence to understand what you're looking for when you express yourself using natural language. Apple's demo used phrases such as "find slides from brian" and seemed effective. The same technique is available in Mail and Finder too, but it remains to be seen whether it works better with complex sentences than the Calendar app currently does for event creation. If it works well, you could pair it with OS X's Dictation feature to gain something like the interactions you get with Siri on iOS. El Capitan also eliminates an annoyance with the Spotlight window: you can move it away from the middle of your desktop, and resize it to show more results.



Spotlight connects to more online sources to provide weather forecasts and sports results.

A wealth of enhanced apps

It looks like El Capitan will make many of the apps bundled with it more capable and enjoyable to use than before

Several of OS X's built-in apps gain dramatic new capabilities in El Capitan. In some cases, these might encourage you to stick with the software provided by Apple, rather than pay for something else. A good example of that is Notes, which evolves from storing text to being more like a project binder for any information you need to gather in one place.

You'll be able to create notes, and add to existing ones, from the Share menu in many other apps. That strikes us as incredibly useful for collating links to web pages, photos and downloaded documents as you research a subject. You might otherwise do that with a combination of Finder and iCloud Drive, but there's no guarantee you would be able to open those items on your iOS device. Notes in iOS 9 also supports these features, so you know you'll be able to read things on any of your Apple devices.

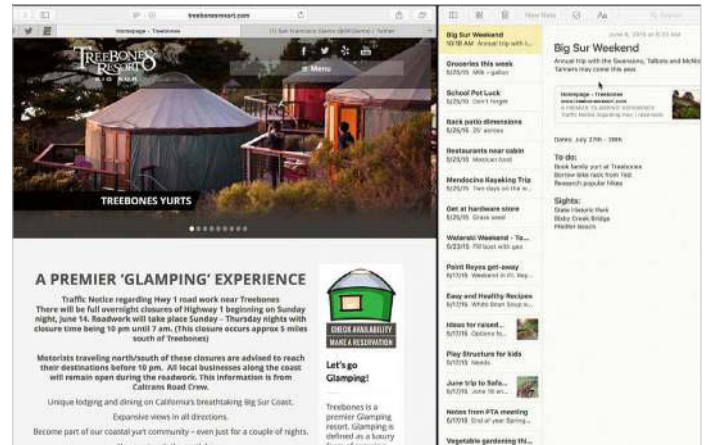
It's also possible to add a checklist as part of a note, complete with the ability to mark things as done, just like you would in the Reminders app. The app's Attachments Browser shows you all the things you've added to notes, grouped into tabs for photos and video, sketches (which you can draw on an iOS device's screen), map locations, audio, and documents.

Mail gains more than just full-screen mode tweaks. It's more proactive about letting you know when it can create an event from information in a message, and when new contact details for a message's sender are detected. You can act upon these things from the top of a message, rather

than having to hunt for the details in its body.

The Photos app, which replaced iPhoto for anyone using OS X 10.10.3, gets a creative boost with the addition of something we lamented in our tutorial in *MF287*: the limited number of built-in tools and effects.

Mail is proactive about letting you know when it can create an event from a message



You can drag links, images and even documents into the upgraded Notes app, and many other apps make it even easier to add to new or existing notes using a shortcut in their Share menu.

Developers will be able to add new tools, and you'll be able to apply more than one to a single photo.

Photos currently lacks the ability to attach location data to a photo. Right now you have to do it with an external tool before importing your pictures. However, that won't be necessary come the autumn because the updated app will enable you to attach a location to an individual photo or an entire moment. You'll also be able to sort the contents of albums, including by date and title, and Apple says it has revised the workflow for the Faces view, which quickly finds pictures of a specific person.

Apple claims performance tweaks will launch apps up to 1.4 times faster, that you'll see up to a twofold improvement in snappiness when switching apps, and that Preview will open your PDFs up to four times faster. You'll find out how these figures translate to your Mac later this year.

Metal

Apple first introduced its Metal application programming interface (API) in iOS 8 to improve performance in games. El Capitan brings it to the Mac, but not just for entertainment. Metal is deeply integrated with the system, replacing OpenGL as the way existing technologies such as Core Animation and Core Graphics talk to your Mac's hardware. Apple claims up to a 50% improvement in rendering performance, and a 50% reduction in

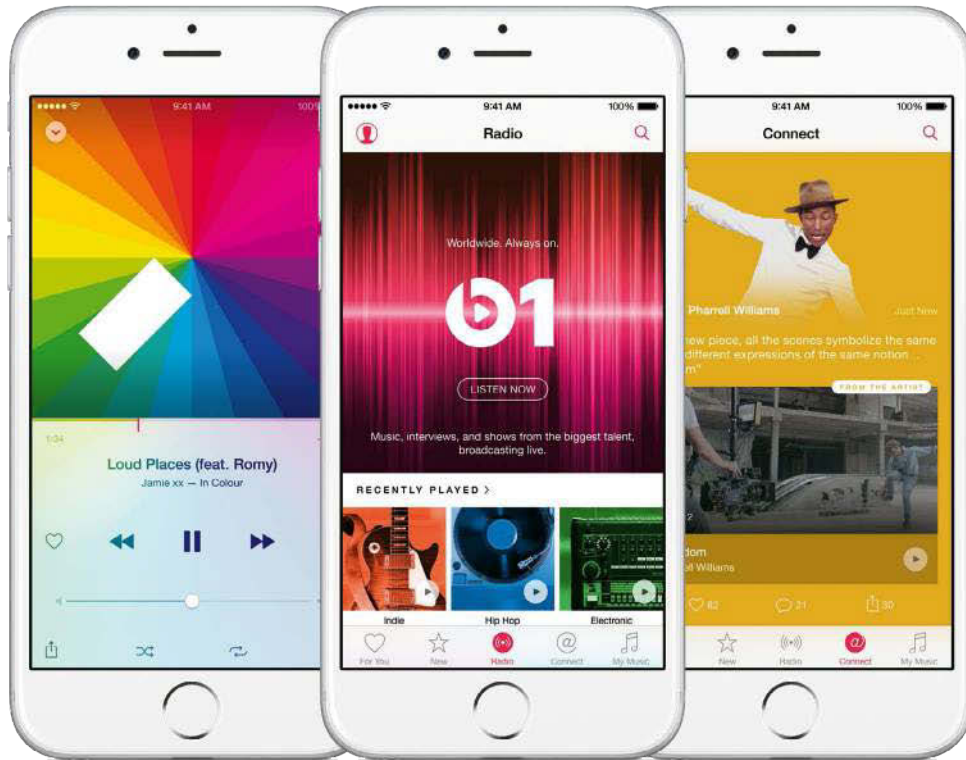
the amount of CPU usage when rendering graphics, which is said to have a positive effect on battery life.

In demanding creative apps, Apple has already worked with select developers to ascertain the difference Metal will make – a huge one by Adobe's reckoning, which reports performance increased by up to a factor of eight. That means there's power left over to devote to enhance the interactivity of creative tools.



Epic Games says Metal gave it a 70% reduction in CPU use over OpenGL, enabling its Unreal Engine editing tools to render effects in real time.

Apple Music aims to be a more feature-rich streaming service than its competitors. Backed by the content and power of iTunes it's surely a winner?



Stream with Apple Music

We've had hints for years that Apple was working on a streaming service, but can it beat established giants like Spotify?



It was this year's 'One more thing...' but Apple's ambitions to join the world of music streaming were already set in motion when it bought Beats in 2014. But since then, Beats Music has just been sitting around doing not a lot, whilst Spotify, Tidal, Google and others continued to dominate the market. Until WWDC 2015, that is, when Apple finally unveiled the multi-platform Apple Music. Apple said

that its new service is a kind of hybrid offering, combining the best of iTunes, streaming music, internet radio, and social media. The app is comprised of three key parts: My Music, Connect, and Radio. Here's everything you need to know about Apple Music, which launches in more than 100 countries on 30 June, just three weeks after its unveiling.

The brand-new Music app

Apple Music is integrated with the Music app on iOS. Tap My Music and you can access your tunes and playlists as normal, yet the app now serves up recommendations too. This looks to be where the bulk of Apple Music streaming will take place, as you'll have on-demand access to the millions of songs already offered by iTunes. Apple made it clear that Siri has a big part to play in how we'll use the service, and it hopes the clever integration will

provide a more seamless service than its rivals. There's also a new way to get recommendations by tapping the For You icon. Here you get a strange bubble cloud of artist recommendations, and you can choose a few you like in order to start training the app to your tastes. It learns from that and your existing collection in order to dish up new things to listen to.

The other parts

Apple promised that Apple Music's radio feature will be different to the playlist format typically offered by internet radio stations. It will be a proper 24/7 service, and at launch there'll be one station, Beats 1, fronted by ex-BBC DJ Zane Lowe, with bases in London, New York and Los Angeles, broadcasting to more than 100 countries. Apple says Beats 1 will focus on great music and new artists, rather than any specific genre.

Connect is the social aspect of Apple Music, letting artists and their fans communicate with one another. There will be built-in features for sharing songs, demos, remixes, soundbites, or whatever random musing might pop into your head. Ping in iTunes 10 attempted to be more in tune with fans, but it never really took off. This is Apple doing SoundCloud-like tools properly.

Connect is the social aspect of Apple Music, letting artists communicate with their fans

When's it out?

It's coming to iOS, Mac and Windows on 30 June. Later in the year, it'll also be arriving on Android and Apple TV. UK-specific pricing hasn't yet been revealed. In the US, Apple Music will cost \$10 per month with a free three-month trial.

iOS 9: efficient and powerful

Apple's mobile devices are about to get a whole lot smarter and more tightly integrated into your life



Prior to WWDC 2015, the rumour mill had gone largely silent on iOS 9. The smart money was on iPhones and iPads getting an update akin to 2009's OS X upgrade, Snow Leopard. In other words, it would be all about boosting efficiency, power and speed, but not exactly deliver an abundance of shiny new features.

But it turns out we're actually going to get the best of both worlds. If iOS 9 lives up to

Apple's promises, it will be an update that, in the company's own words, will "elevate the foundations of the platform", along with offering new apps and features to greatly improve your iOS experience – whether you're using an iPhone or an iPad.

More power?

On watching the WWDC keynote, it sometimes felt like Apple Senior Vice President of Software Engineering Craig Federighi was checking off wish-list items supplied by a hive mind of iOS device owners. Faster and more responsive apps are on the way, due to them taking better advantage of your device's CPU and GPU, and Spotlight search has been overhauled to be proactive and intelligent in response to your needs.

Welcome boosts are coming to battery life. By optimising for real-world scenarios, efficiencies across the entire operating system, and some added intelligence (for example, an iPhone when face down won't turn on its display), a typical iPhone running iOS 9 is claimed to last for an extra hour before it



The latest version of iOS looks much like the previous two, but a couple of new icons hint at new features, and there are plenty of changes to boost your productivity and efficiency.

needs recharging, very welcome indeed!

iOS 9 features a new Low Power mode. A single tap, according to Federighi, "pulls levers you didn't even know existed", providing up to an additional *three* hours of extended battery life. On occasions where your iPhone has seen heavy use, this might be enough to get you through the rest of the day, with only minor compromises to your device's usability.

Some of the incoming changes are more visible. Security will be enhanced, better protecting your personal information and content. Passcodes on devices with Touch ID enabled will have six rather than four digits, making them tougher to crack. Elsewhere, two-factor authentication will further lock down your device, requiring a verification code when you sign in from a new browser or on a new device.

We cover the biggest iPad change on iOS 9, namely split-view multitasking, in the box-out below. But if you spend a lot of time typing, you're going to love the new keyboard. The QuickType keyboard augments the existing suggestions bar with tappable buttons for cut, copy and paste, and for accessing text

Doing the splits: iPad multitasking

We've long wanted to see two apps next to each other on the iPad. With iOS 9, Apple gives us that. For a quick glance at an app without leaving the one you're in, there's Slide Over. Respond to a message or jot down a note, and then slide the pane away. Alternatively, tap the divider to enter Split View, with each app fully active and working independently.

Although Apple demoed its own apps, developers can add this to their

own apps, and those that already use auto-layout and size classes have done most of the work already; Apple said Twitter was updated for iPad multitasking "in minutes". Elsewhere, Apple demoed a new task switcher with full-screen app previews, and a picture-in-picture mode for watching video while using another app.

Split View is for iPad Air 2 only. Slide Over and picture-in-picture work on iPad Air, Air 2, mini 2 and mini 3.



For power-users, the two-up app view is one of the most exciting changes to come to iOS 9 – but you'll need an iPad Air 2 to use it.

formatting, attachments and images. Editing speed is further boosted by the keyboard becoming a virtual trackpad of sorts when touching it with two fingers; in this mode, you can move the cursor, make selections, use cut and paste, and drag items around a document.

If you prefer hooking up a physical keyboard, iOS 9 helps you discover built-in keyboard shortcuts (developers can also add their own), and Apple's included some for Spotlight search and an app-switcher that will be familiar to anyone who has used a Mac. And in a move that deserves a 'finally', keys on your keyboard are in lower case until Shift is activated. So there'll be no more playing 'capital letter lottery', giving up, activating Caps Lock, and JUST TYPING LIKE YOU'RE ALWAYS VERY ANGRY. (That last change is available on iPhone, too.)

Maps goes public with transport

Two existing apps are getting major updates in iOS 9. The first, Maps, had a rocky start, but has noticeably improved since its launch in 2012's iOS 6. During the keynote, it was revealed the app now gets five billion user requests per week and has usage 3.5 times higher than the "next most-used mapping app" on iOS (which we assume is Google Maps). However, Apple's focus is now shifting beyond roads and highways, with a Transit view that emphasises public transport lines, stations and stops.

Tap a station and you can see what lines run through it, along with departure



In iOS 9, Maps will work better for commuters who are dependent on public transport, although the list of cities outside of China for which this is available is reported to be short at this stage.

times. When travelling, Maps provides multi-modal routing. Federighi said Apple's taken special care to get the details right. For example, an underground/subway station is not just a fixed-point but a huge underground structure. Apple has carefully surveyed entrances and exits to send you directly to the right one. That could well be the difference between catching a train or not.

Siri and Search

Search is shifting from being reactive to being proactive, and iOS 9 is set to make great strides in this space. The concept of a 'proactive assistant' is baked deep into the operating system, which can learn your habits and provide relevant apps and content at opportune moments. For example, if you like a morning run, you could get suitable music on the Lock screen.

Siri has reportedly improved in accuracy over the last year, to the point Apple claims

it's industry-leading. Now, Siri will have more intelligence too, understanding time and place. Ask to see "photos from London last August" and you'll get them. Find something interesting in Safari and you can ask it to "remind me about this at 5pm"; later on you'll get a timed reminder, complete with a link to what you were looking at.

But it's the iOS's built-in search engine that's arguably getting the biggest revamp. It's now accessed by swiping left of the

Home screen, and comes pre-populated with content. You'll see contacts based on upcoming meetings and your communication patterns, and apps you tend to use at the time of day you're searching. Nearby places for eating and entertainment, along with news headlines, also feature.

Search will be open to developers, enabling your favourite apps to be plugged directly into the system. You'll be able to access recipes in Yummly and rentals in

Airbnb, and then go right back to search when you're done. Rather than an occasional place to visit, it will be an intelligent hub, offering sports results, weather forecasts, conversions, and fully playable videos.

Crucially, none of this compromises your privacy: Apple said it doesn't mine your content in the cloud to learn about you, and everything stays 'on device'. Searches are anonymous, aren't linked to other Apple services, and they don't share identifying information with third parties. As Apple maintained: you are in control.

Rather than merely being functional, search and Siri in iOS 9 aim to be intelligent. In particular, the main search screen has been revamped in order to immediately provide you with useful in-context shortcuts and links.



When you've time to kill, a new Nearby feature helpfully lists local eateries.

Initially, though, Transit isn't nearly as comprehensive as Google Maps. It's limited to specific cities – over 300 in China, but only ten elsewhere: Baltimore, Berlin, Chicago, London, Mexico City, New York, Philadelphia, San Francisco, Toronto and Washington, D.C. On Twitter, freelance journalist Charles Arthur confirmed that, at the time of writing, Transit doesn't seem to know stations that don't connect to London. Our hope is the feature will expand rapidly.

Notes becomes noteworthy

Notes is also receiving major changes. The main toolbar boasts two new buttons: a wiggly line and a camera. (The share button's been moved to the top-right.) Tap the camera and you can embed images directly into your notes; the wiggly line is used to kick off free-form sketches. You get a range of brush styles and colours, along with a ruler for drawing straight lines.

If you're keener on using Notes in a more traditional manner (that is, typing), there are improvements there, too. Text can be set in bold, italic or underline, and be formatted with titles and headings. You can add checklists as well, checking off items with a single tap.

Links also get a major boost, moving them beyond browser-style underlined text. Now you can embed links from Safari by using the Share sheet. This creates a smartly formatted lozenge that displays the web page's title and domain, along with a thumbnail of what you were looking at. For faster access to such web-page links – along with photos and map links – there's a new attachments view; tap an item and you get right back to the note in which it's stored.

The two new apps

It looks like iOS 9 will have two entirely new apps – sort of. One, iCloud Drive, was discovered by 9to5Mac and appears to be a means of accessing the iOS Document Picker without having to open an app that supports it. It's hidden by default, but activated in Settings > iCloud > iCloud Drive. 9to5Mac said no content loaded when the publication tried to use it, perhaps explaining its omission from the WWDC demos.

Conversely, Apple's new News app looked very much the complete article. It resembles Flipboard, in that you tell it what you're interested in – by topic or publication – and it fashions a personalised digital magazine, which is suitably accessed using the 'For You' tab. Apple claimed the best stories will be created in its new Apple News format, details of which were unavailable at the time of writing. When demoed, it appeared to resemble one of those 'special report' web pages, with rich typography, nice-looking galleries and swooshy animations.

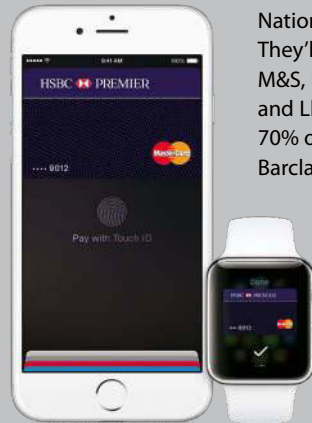
The News app will start out in the USA, UK and Australia, and Apple argues that there's "never been a more beautiful

Apple Pay

In iOS 9, Passbook becomes Wallet, a single place to house debit/credit cards, loyalty cards, boarding passes and more. Apple Pay continues to expand in the USA, and can be used at over a million locations. The big news is that in July, Apple Pay will arrive in the UK, at 250,000 locations (more than the USA initially had), and will be supported by Ulster Bank, NatWest,

American Express, Santander, RBS, Nationwide, HSBC and first direct. They'll be joined in the autumn by M&S, Bank of Scotland, Halifax, MBNA and Lloyds. These banks account for 70% of UK credit and debit cards.

Barclays was notably absent, and took to Twitter to say it had been talking to Apple about how its customers "could use Apple Pay in addition to our existing mobile and payment services, and that these talks remain constructive".



magazine-reading experience". Publishers might disagree, but Apple's reach will certainly give rivals pause for thought, and users will be grateful for Apple's stance on privacy – unlike certain other news aggregators, what you read in News isn't shared with other services and third parties.

With WWDC being a developer conference, iOS 9 also had plenty to excite attendees. New gaming frameworks were announced: GameplayKit for AI and pathfinding; Model I/O for beautiful lighting of 3D objects; and ReplayKit for recording and sharing gameplay. HealthKit will track additional metrics, such as reproductive health, hydration and UV. CarPlay will support wireless connections and apps developed by car manufacturers. And programming language Swift received a bunch of optimisations and new features, before Apple surprised everyone by making it open source.

Coming soon...

iOS 9 will be available this autumn, and will be compatible with all devices that can run iOS 8. As always, the upgrade will be free, and in a first for iOS, there will be a public beta in July (see page 21). Another first is a new Android migration tool to assist switchers. If you're resolutely Apple-only, it's welcome news that unlike the hefty 4.6GB of free space required to upgrade to iOS 8, you'll only need 1.3GB available on your device to install iOS 9.

iOS 9 will work with all devices that can run iOS 8, and you'll only need 1.3GB free space to install it

watchOS 2



The biggest change coming to Apple Watch is apps being able to run their logic on the

Watch rather than an iPhone. This potentially speeds up apps and makes Apple Watch more independent; apps will be able to

communicate with known Wi-Fi networks, and more directly access hardware, including the Watch's speaker, mic and Taptic Engine.

The watch face is getting more customisation options. Developers will be able to create their own complications to show, say, flight times or car battery charge details.

Combined with the new Time Travel feature – previewing your day by using the Digital Crown to temporarily adjust the time – the watch face will be far more useful. And it will be more beautiful and personal too, with new faces that show time-lapse videos of famous landmarks, or your synced photos.



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Words: Kenny Hemphill **Illustration:** Paul Blachford

The best free Mac apps

Why spend a fortune on apps when you can get these brilliant ones for nothing?



There are free apps and there are free apps. The App Store has given free apps as a whole a bit of a bad name. Take look at the top 10 free apps on the store and it's not very enlightening. Of course, OS X Yosemite is the most downloaded free app there. Look for others and once again the results aren't much help. It's almost as if Apple doesn't want you to find the really good stuff.

That's where we come in. Every app on these pages has been given the MacFormat seal of approval. And in every case, the app is a solid alternative to a well-known paid-for app, in some cases saving you hundreds of pounds.

Sure, the free apps aren't as fully-featured as their commercial counterparts, but how many of those missing features do you need? In every instance featured here, the free app does the basics, and sometimes much more, very well.

You won't find any demos or trial versions in our collection, though some of our choices offer in-app purchases. Make no mistake that the in-app purchases provide additional features and functions, but they're not necessary to do the basics.

Wunderlist is a prime example of how good free apps can be. Its free version is so good that we wonder how its paid-for rivals manage to survive.

There are other benefits to using free software. Much of it is open source and uses open document formats, rather than the proprietary formats favoured by applications like Adobe Photoshop. That makes it much easier to swap documents between applications, and offers a degree of future-proofing too. Even Microsoft Office demonstrates this; for the best part of a decade, it has used a documented XML format, enabling your documents to be opened in free alternatives such as LibreOffice, although some content may look different in them.

Can you use these tools in a professional workflow? Absolutely. Many of them are used in just that way. There are magazines laid out in Scribus, for example, and Google Docs is widely used for collaborative working in large organisations.

The best thing about free apps, of course, is that trying them costs nothing other than your time. Download them, have a go. If it turns out they suit your needs, you've saved yourself some money.

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Much free software is open source and uses open document formats, giving you a degree of future-proofing to change apps

MacFormat's free picks

Christian Hall

Editor



Pushbullet

pushbullet.com

This is a very niche little app, with no paid-for rival as such, but it allows me

to see and dismiss all my iPhone notifications on my Mac. Yosemite's Notification Center is good, but Pushbullet is a little more flexible. You can also send customised alerts between your devices with text, links and files.

Alex Blake

Commissioning Editor



Handbrake

handbrake.fr

This app can convert many types of video, including DVDs you

might have created with iMovie in the past, to formats that can be played back on Apple devices. It's packed with advanced features, yet it's easier to use than it first seems; you only really have to pick one of its Apple device presets.

Alan Stonebridge

Production Editor



Burn, burn-osx.

sourceforge.net

Apple's iLife apps no longer provide a way to write your home videos as

a DVD-Video. Perhaps you have a relative for whom that's still the idea way to share a video because they don't have a computer. In that case, Burn – and a £20 USB DVD writer, if there isn't one built into your Mac – has you covered.

Paul Blachford

Managing Art Editor



The Unarchiver

unarchiver.c3.cx

At some point, you might have compressed and archived documents in

a format such as a Stuffit archive – especially if you've been using computers since the '90s. This capable little tool is likely to be able to unpack those archives. Then you'll just need an app that can read the files it extracts.

IMAGE EDITING

PIXELMATOR

SAVING
£22.99!

Pixlr

FREE

Autodesk
pixlr.com/desktop

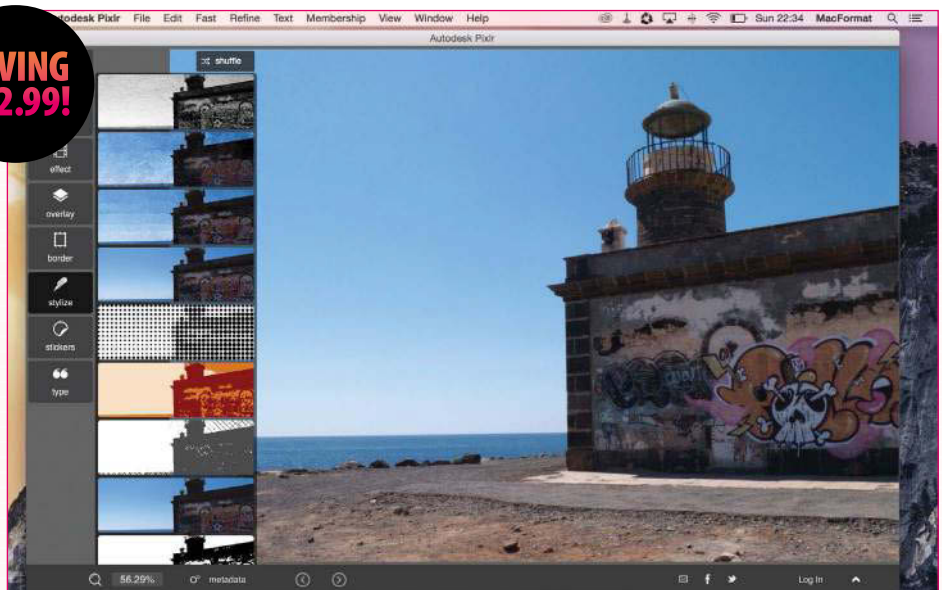


Autodesk has a fine history of producing free apps. SketchBook Express and Motion FX are two of the better ones, and Pixlr is

another. It enables you to easily edit images, add effects and filters, and blend one image with another. You can crop, straighten and re-size images.

The app's auto fix feature adjusts colour and lighting at the click of a button. Some of Pixlr's effects aren't to our taste, but with hundreds to choose from you should have no difficulty finding some you like.

In addition to myriad visual effects, there are 340 overlays and 200 borders, so you can create over two million combinations.



Pixlr's tools are laid out down the left-hand side of the image you're working on. Clicking a tool opens a panel to display its options, with a thumbnail preview of its effect to show how it will affect your image. You can also adjust the intensity of effects before applying them.

Setting up a free pixlr.com account unlocks a few advanced features). There are no selection

tools in the free versions of Pixlr, though if you pay £1.49 per month or £10.99 per year for a Pro membership, you gain access to selection and masking tools, among other things.

If you use photo-editing apps mainly for tuning up images and adding effects before sharing them, Pixlr is ideal, packed with features and it won't cost you a penny.

VECTOR GRAPHICS

ADOBE ILLUSTRATOR

SAVING
£17.15/
MONTH

Inkscape

FREE

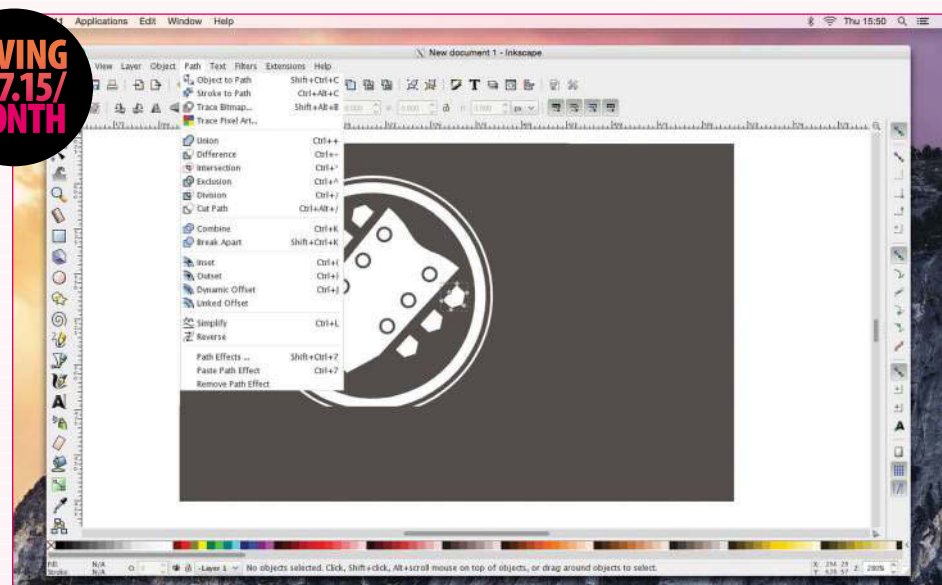
Open source
inkscape.org



Inkscape is a vector drawing app with all the key tools you'd expect in an application of its type. So there's a pen tool that enables you to draw

Beziér curves, you can add text, and you can manipulate objects using the selection tools. It's also easy to clone, copy and paste objects, and place them on separate layers.

If you've used Adobe Illustrator, you might find Inkscape takes a bit of getting used to because many tools they have in common have different names and aren't where you might expect. Most are present, though. Take Illustrator's Pathfinder palette, for example. In Inkscape, the same options for combining objects are called Boolean operations.



There's a tool similar to Illustrator's Live Trace, which assists in turning a sketch or a bitmap image into vector art. And the use of nodes on paths makes them easy to edit; their appearance changes to indicate different features, and they can be selected, moved, rotated, and scaled using keyboard shortcuts – a godsend if constantly clicking and selecting with a pointer drives you up the wall.

New features in the latest release (0.91) include enhancements to the Find/Replace tool, a new Measurement tool, and a feature that allows you to swap the positions of selected objects or their stacking order.

There are tools missing when compared with Illustrator; there's still no gradient mesh tool or proper colour management, but new features are being added all the time.

PRODUCTIVITY THINGS

SAVING
£39.99!

Wunderlist

FREE

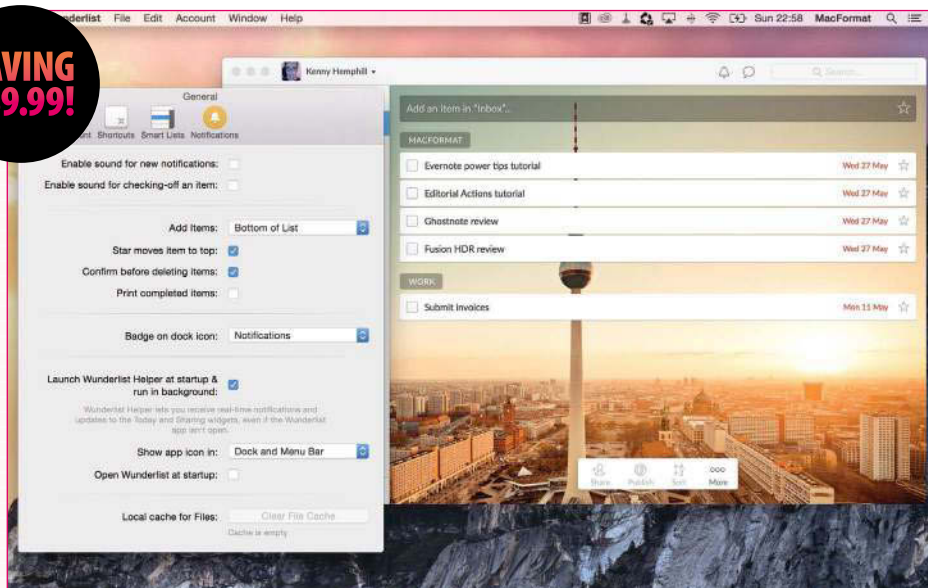
6Wunderkinder
wunderlist.com



Describing Wunderlist as a list making app is a bit like describing Photoshop as a tool for editing photographs. It is a list-making app, but oh,

what lists! You can use it to make anything from shopping lists to work schedules, and you can set alerts to remind you to perform tasks. Lists can be shared with colleagues and tasks delegated, and you can even publish them on the web for anyone to see when you send them the address.

Best of all, Wunderlist on the Mac syncs with Wunderlist on iOS, so you can create lists on one device and have them immediately – and we mean immediately – available on another. The iPhone version also includes an app for



Apple Watch, which alerts you to tasks you need to complete. It's also possible to break down large tasks into subtasks. The Activity Center alerts you as things happen on lists that you share with others – say, when a task is delegated to you.

Wunderlist couldn't be easier to use and sports the kind of collaborative features and

syncing tools you'd normally have to pay a great deal for – Things, for example, charges you separately for its Mac and iOS versions, in order that you can sync them.

Wunderlist looks great too, with a choice of photographic backgrounds which work particularly well full-screen on the Mac. The app is quite simply brilliant. Get it.

PUBLISHING ADOBE INDESIGN

SAVING
£17.15/
MONTH

Scribus

FREE

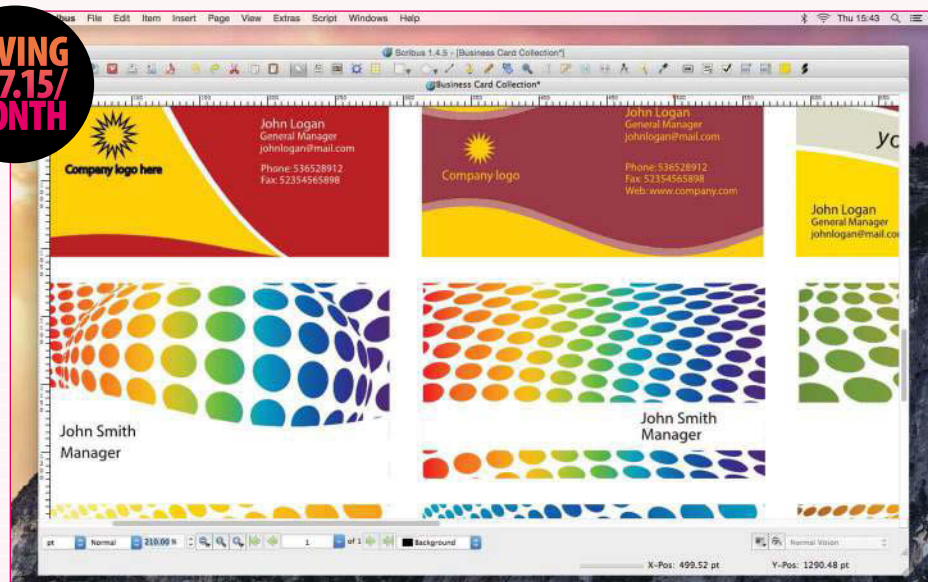
Open source
scribus.net



If you need a free tool for a printed project, this one's well-worth a try. Scribus is an open-source page layout app which claims to offer press-

ready output. Several small magazines use it in their production workflow and it's not difficult to see why when you look at the available features. Colour separations? Check. Support for CMYK and spot colours? Check? ICC colour profiles? Plenty of control over PDF output? You get the idea.

Scribus uses an open-source file format, which has been updated in the latest release, 1.5, and doesn't support older versions of the app. That's not a problem if you haven't used Scribus before. More of an issue might be the



lack of support for InDesign and QuarkXPress files. But don't let that put you off.

Scribus can open just about any image file you're likely to need, and the latest version is able to store bitmap images, rather than just link to them.

There's also a new feature called Symbols, which modifies instances of an object when the master item is modified. Version 1.5 also

includes new type features. Associated licensing costs means there are no Pantone colour palettes in Scribus, but there are over 100 other colour palettes including several with colour schemes of large organisations.

The interface, like many open-source tools, takes a bit of getting used to, but you'll find plenty of help and tutorials in the Scribus wiki (<http://wiki.scribus.net>).

PASSWORD MANAGER

1PASSWORD

SAVING
£39.99!

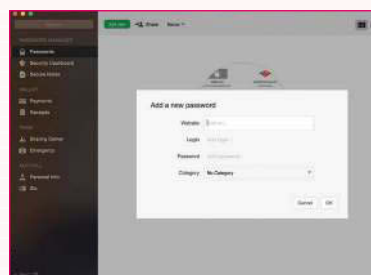
Dashlane

FREE Dashlane, dashlane.com



Dashlane is a password manager which uses 256-bit AES encryption to securely store passwords and other private data. Browser plug-ins for Safari, Firefox and Chrome enable you to generate secure passwords and save them, autofill those you've already saved, and automatically fill out forms. Unlike 1Password, Dashlane lacks a menu bar icon, so you'll either have to open the app or a browser to access Dashlane's features and data.

In addition to logins, Dashlane can store payment data (credit card numbers and bank account details), secure notes, and receipts.



In addition, its bold, bright dashboard leaves you in no doubt as to the integrity of your data.

You'll have to pay £20.99 per year if you want to sync passwords between your Mac and iOS devices. If not, Dashlane is free and a match for 1Password.

CALENDAR

FANTASTICAL

SAVING
£39.99!

Sunrise

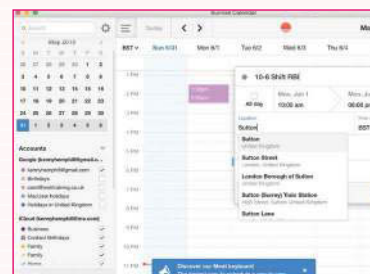
FREE Sunrise Atelier, calendar.sunrise.am



Sunrise was recently acquired by Microsoft. But don't let that put you off, because it's still free. It's often billed as an alternative to OS X's Calendar app, but it's much more than that.

Sunrise can connect to Google Calendar, iCloud and Microsoft Exchange, as you'd expect. Of course, it's also able to import your existing calendars. Beyond that, you can also link Sunrise to social media accounts such as FourSquare. By doing so, when you use FourSquare to check in every time you go to work or the gym, Sunrise will display a record of how many times you've gone to that place during the month.

The app also supports Facebook event invitations, enabling you to respond to them within the app rather than going to the website. And, like all the best calendar apps, Sunrise supports natural language input for creating events.



DJ SOFTWARE

TRAKTOR PRO

SAVING
£89!

Cross DJ Free

FREE Mixvibes, mixvibes.com



Well-practised and aspiring DJs will love Cross DJ Free because it can import tracks from your iTunes Library, and from elsewhere as long as they are MP3, AAC, AIFF, FLAC or Apple Lossless files. It sports a mixer with three-band equaliser, volume faders, cross-fader, and level meters. Naturally, it includes beat matching too.

The app works with all the major brands of decks and controllers, with the exception of those designed specifically for Traktor Pro. You can only use two decks, rather than the four available in Traktor Pro.



There's no automatic cueing or cross-fading of tracks, and no automatic key detection either.

However, Cross DJ Free has plenty to offer the bedroom DJ, and if you want to go further and mix video too, the full version of Cross DJ is only £22.99.

PHOTO EDITING

ADOBE LIGHTROOM

SAVING
£8.57/
MONTH

Darktable

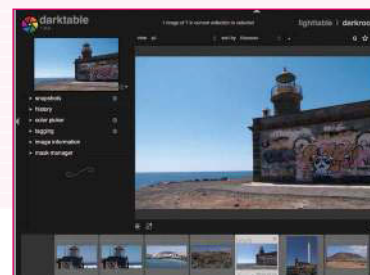
FREE The Darktable team, darktable.org



Darktable takes photos in the Raw format captured by your camera's sensor and makes non-destructive edits to them. It works as a database, with a series of modules that perform operations on records (photos). For example, the Collect module enables you to search for images by tag, rating, and other metadata.

Other modules enable you to crop and rotate images, perform curve adjustments to change a picture's tonality, and recover blown out highlights. Several modules add artistic effects: watermarks, frames, and vignettes, and you can soften images, add grain and simulate human low light vision.

Darktable's modular, open-source nature means it's constantly evolving. Check it out if you miss Aperture's processing tools and don't want to spend on Lightroom.



THE PERFECT COMPANION

for Apple Watch & iPhone

orzly

DuoStand

For use with Apple Watch & iPhone

Showcase your Apple Watch and iPhone whilst keeping them both fully charged with the Orzly DuoStand. Made from an aluminium build, the DuoStand has a minimal and sleek design so it won't look out of place on your desk at home or at work. The angled design of the DuoStand allows you to charge your Apple Watch and iPhone whilst still keeping them in full view, allowing you to comfortably view or respond to notifications either on your Apple Watch or iPhone. The DuoStand is compatible with both 38mm and 42mm versions of the Apple Watch and uses your existing grommet magnetic charger.

Features

- Compatible with Apple Watch 38mm & 42mm
- Can be used to charge your iPhone & Watch (cables not included)
- Easy Apple Watch mount and dismount
- Slim and stylish design
- Keeps your devices in full view
- Cut outs for keeping cables tidy



Also available in **Black** and **Gold**

Take style and protection to the next level with Orzly cases for the Apple Watch

Change the look of your Apple Watch instantly with the

5 in 1 Face Plate Pack

Includes 5 colours

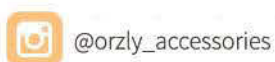


Protect your Apple Watch without hiding it with the Orzly

InvisiCase



Available to buy now from Orzly | Amazon | Tesco



www.orzly.com

OFFICE SUITE

MICROSOFT OFFICE 2011

SAVING
£109.99!

LibreOffice

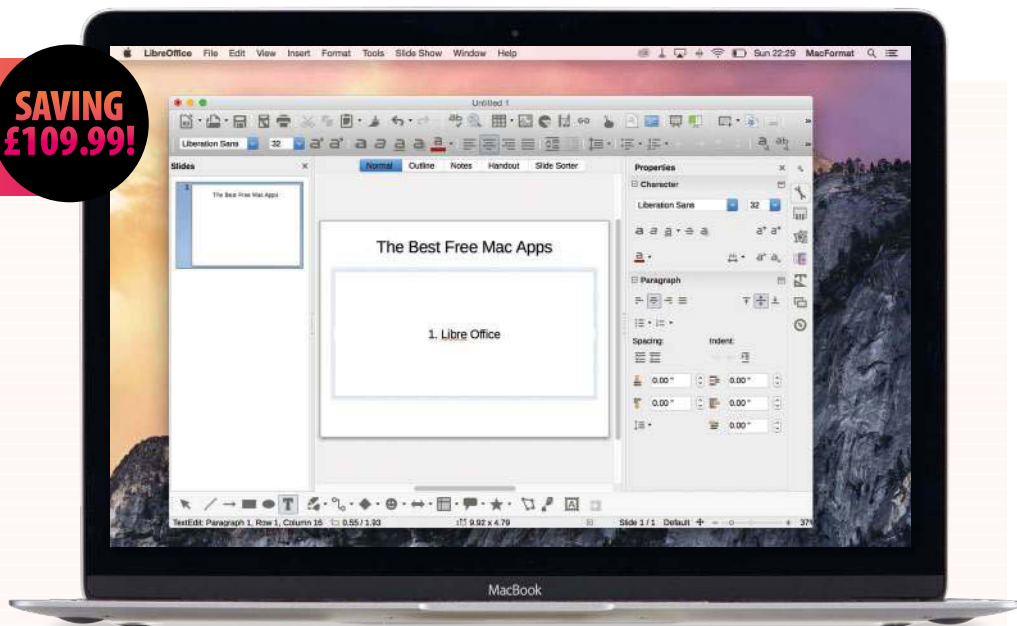
FREE The Document Foundation, libreoffice.org



It's four years since Microsoft last released a new version of Office for Mac, and if you're tired of waiting for Office 2016, you'll find plenty of alternatives

both as web and Mac apps. The best of the latter category is LibreOffice, a full-featured office suite which surpasses Microsoft Office for Mac when it comes to the sheer number of apps bundled within it.

It lacks an equivalent of Outlook, but in other respects LibreOffice matches Office 2011. As well as modules for word processing, spreadsheets, and presentations, there's a database, a drawing program, a database tool, a formulae and equations tool, and an app for creating and editing charts. There are also add-ons created by a huge community of developers, demonstrating one of the suite's strengths as open-source software.



LibreOffice Writer looks similar to Microsoft Word and can import Word documents, although some features aren't imported.

What's more, LibreOffice supports a large number of file formats, including Microsoft's proprietary .doc and .xls and XML-based .docx and .xlsx extensions.

If you think LibreOffice may be a lightweight alternative to Microsoft's behemoth, think again. Writer, for example, includes features for adding comments, tracking revisions, and

accepting or rejecting changes. It's spelling and grammar checker are excellent, and it has a large gallery of symbols, shapes and other graphics. Long document support is also great thanks to support for creating indexes, bibliographies, and tables of contents.

However, Writer does lack the page layout mode available in both Microsoft's Word 2011

Three alternatives

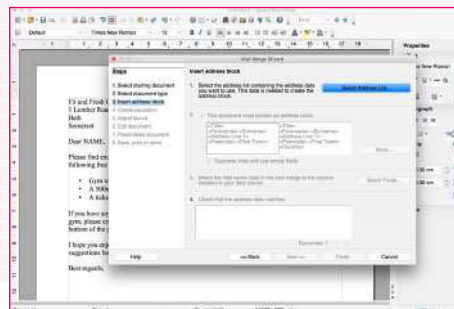
APACHE OPENOFFICE

FREE Apache, openoffice.org



If you've avoided OpenOffice because it used to be a non-native app, it's time to give it another look because the latest version sits better alongside other Mac

apps. It's a smart choice if you need to personalise templated correspondence, thanks to its mail merge wizard. The ability to record and play back macros, which enable repetitive tasks to be performed quickly, is another reason to adopt it.



OpenOffice's mail merge wizard plugs a gap in Apple's suite.

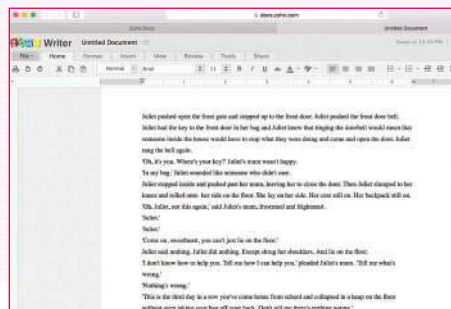
ZOHO DOCS

FREE Zoho, zoho.com



Zoho is a set of online word processing, presentation, and spreadsheet tools. It also available as an app for iOS, and you can synchronise documents between

that and the web app. The free version is limited, but there's lots to like about it, including 1GB of storage, version tracking, and user management. Documents can be managed using Zoho Docs for Desktop, which syncs your work with your Mac.



Collaboration and user management are key features of Zoho.

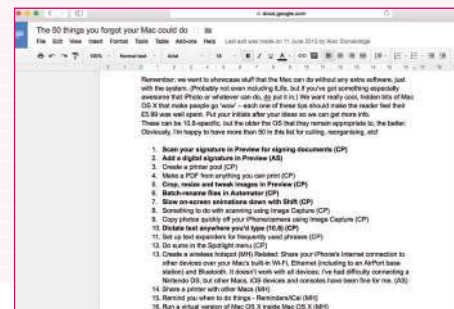
GOOGLE DOCS

FREE Google, docs.google.com



Google Docs is a hugely powerful set of online tools for sharing and collaborating on documents like spreadsheets and text files. The creator of a document always has

control over who can read and edit documents, and you can review changes that have been made to documents and by whom. Beyond office suite essentials, the Forms feature makes it easy to build detailed surveys and analyse people's responses.



Google Docs is likely to be your first choice for survey analysis.

When you open LibreOffice, this window presents pre-installed templates for you to choose from.

and Apple's Pages, meaning that everything must be done inline. You can't, for example, create text boxes and place holders for images and drag them around the page. For a free way to do that, try Scribus (see page 33).

The inestimable value of free

Calc, the spreadsheet tool, doesn't support Visual Basic macros, but it does have plenty of other commendable features. The conditional formatting tool is excellent, for example. There's a Scenario Manager to allow you to perform complex 'What If...' analyses, and a solver component which allows you to solve optimisation problems where the optimum value of a particular cell is dependent on constraints provided in other cells.

LibreOffice's presentation component, Impress, lacks some of the user interface refinement of Keynote and PowerPoint, and it lacks keyboard shortcuts, but it's powerful enough for most of us. It has drawing and diagramming tools, animation and effects, and the Fontwork tool enables you to create 2D and 3D images from text. When it's time to deliver your presentation, the slideshow mode allows you to choose between automatic and manual modes, set the duration for which slides are shown, and decide whether the pointer is visible. Impress supports multiple displays, enabling you to see the upcoming slide and your notes while the audience sees the current slide in the presentation.

Base, the database tool, acts as a front-end to several engines, including MySQL and

Microsoft's Access. However, it can also be used as a simple, standalone database. There are wizards to help you set up a database, and it can integrate with other LibreOffice apps. So, for example, Base can be used to hold records for a mail merge in Writer.

Draw can be used to create anything from quick sketches to technical drawings up to 300x300cm in size. It's strength, though, is as a diagramming and charting tool. Whether you need to draw an organisation chart, flowchart, or network chart, you'll find the tools you need here. Smart connectors and glue points make it relatively simple to put charts together, and dimension lines automatically calculate and display linear dimensions as you draw.

Math, the equations and formula editor can be run as a standalone tool or provide its services from within any of the suite's other

Calc is LibreOffice's spreadsheet component, and it will be immediately familiar if you've ever used Microsoft Excel.

components. Formulas can contain a range of elements including fractions, integrals, mathematical functions, and matrices. Like Math, Charts can be called from within any LibreOffice component. It allows you to create different types and styles of charts by simply providing it with the data to be presented.

Bursting with content

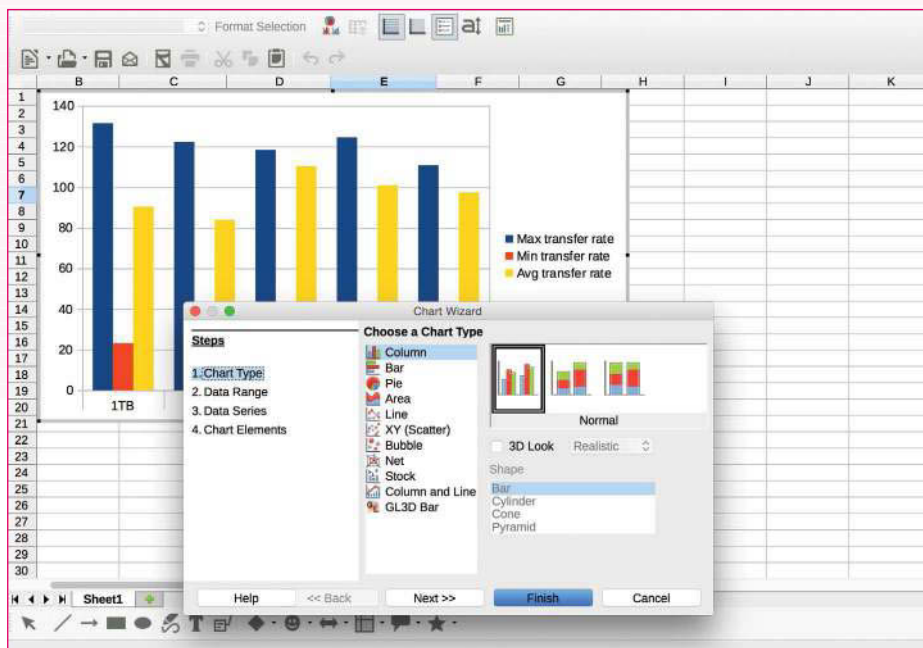
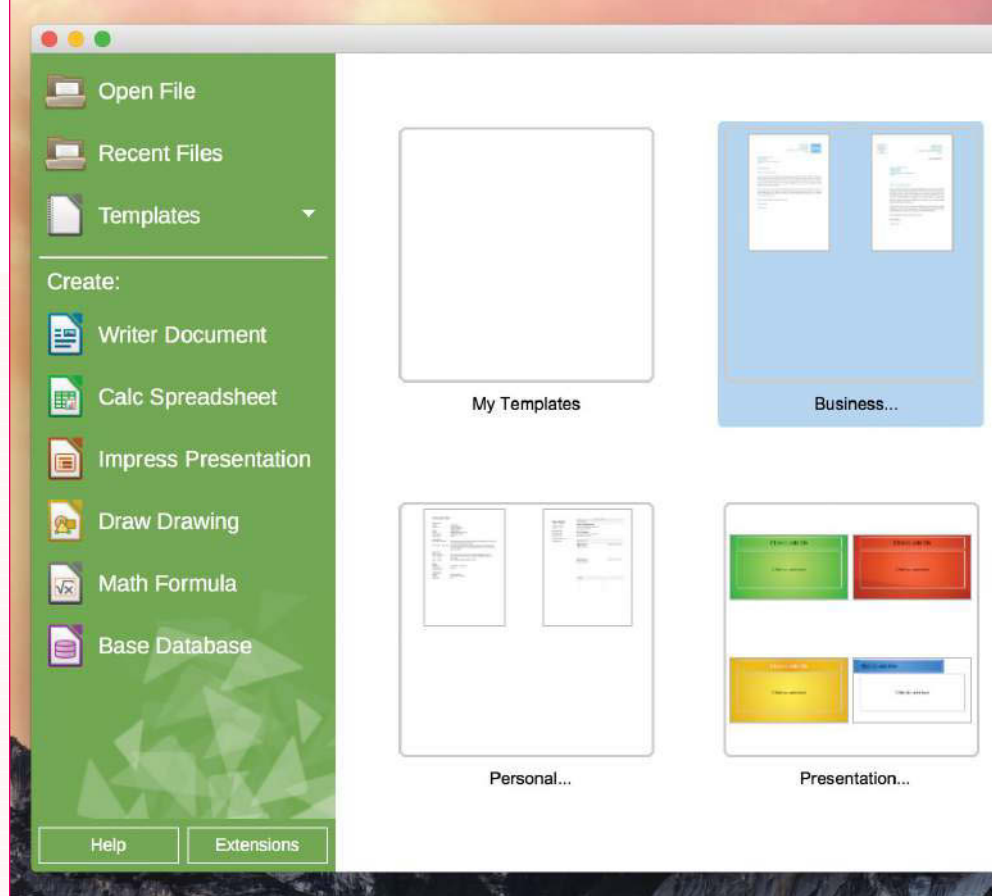
The latest version of LibreOffice, 4.4.3, includes several new features, including the ability to digitally sign PDFs, and to share them on SharePoint, Microsoft's OneDrive, and CMIS-based content management systems.

This version also sees an overhaul of the user interface, with new menus and toolbars, a re-designed sidebar and a new colour manager. Version tracking capabilities have been beefed up too.

Key to LibreOffice's appeal are the vast array of extensions and templates that are available for it. These are developed by a community of developers and LibreOffice enthusiasts, and they cover a wide range of features. Among many others, there are extensions to add a clip art gallery, support for importing and exporting to Google Docs and Zoho Office, several language tools that add support for dictionaries in languages other than English.

While the templates available may lack the polish of those included with Apple's Pages, Numbers and Keynote apps, that's made up for in sheer quantity. There are hundreds of templates covering just about every kind of use you can image for a word-processing tool or spreadsheet.

If you've tried LibreOffice in the past and found it lacking, give it another go now because version 4.4.3 really is excellent.



BITMAP IMAGE EDITORS

ADOBE PHOTOSHOP CC

SAVING
£8.57/
MONTH

Gimp

FREE The Gimp Team, gimp.org



Gimp, an open-source bitmap image editor, has been around for as long as OS X. If your Mac runs Mountain Lion, Mavericks, or Yosemite, you can install it as

a native application, otherwise you'll have to install X11 first (<http://apple.co/1ML4qBk>).

While the app's interface is very different to Photoshop, many tools found in Adobe's heavyweight image editor are also provided here. There's the lasso and magic wand for selection, a pen tool for drawing Bézier paths, a paintbrush, and a clone stamp. You can build up your images on multiple layers, too.

Some tools can be hard to find if you're used to something Photoshop – the Levels dialog is in the Color menu, for example. The good news is that the interface is customisable, so you can set it up just how you like, and have different environments for different tasks.

The app includes a full set of painting tools, including Brush, Pencil, Airbrush, and Clone. It features a powerful gradient editor and a blend

Although Gimp's interface is different to Adobe Photoshop, its layout – with tools and their options on the left and other palettes on the right – is familiar and eases you into free image editing.

tool, and you can import custom brushes and patterns. There's full support for multiple layers and channels, including alpha channels, and the number of undo operations you can perform are limited only by the amount of disk space that's available.

Tailor-made features

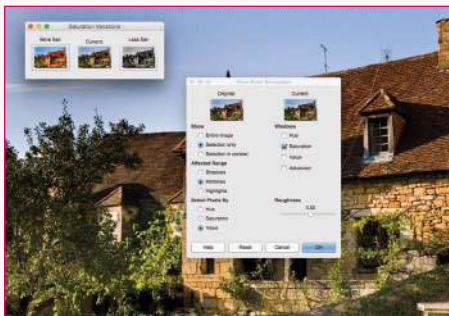
For selecting pixels, familiar rectangle, rounded rectangle, and lasso tools have you covered, as well as advanced path tools for creating Bézier curve and polygonal selections. Transformation tools include rotate, scale, shear and flip, and there are tools to fix lens distortion, barrel distortion and vignetting.

Perhaps Gimp's most important feature is that it's extensible. Anyone can create plug-ins for it and share them – over 100 are already available (<http://registry.gimp.org>). Plug-ins can be written using the Scheme, Python and

Perl languages, and this scripting language support allows Gimp to be automated too.

Gimp isn't perfect, of course. Its Text tool is in need of much improvement, and there are none of the 3D tools available in Photoshop to be found here. Nor does it support anything like Photoshop's non-destructive Adjustment Layers for easy experimentation with colour changes. Other missing features are taken care of by third party plug-ins, such as support for the CMYK colour space, which is available in Separate+ (<http://bit.ly/mf289separate>).

Gimp is not a complete replacement for Photoshop, but it provides so many features found in Adobe's venerable bitmap editor that, for most purposes, it's a perfectly usable alternative. Thorough documentation and tutorials make it relatively easy to get started, and a large development community and user base mean Gimp's constantly evolving.



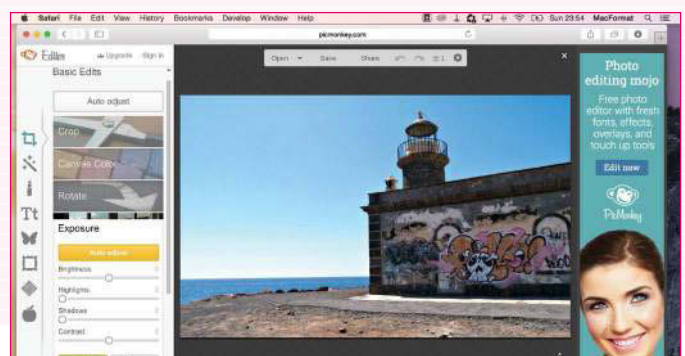
Gimp's already extensive capabilities can be taken further by downloading plug-ins from a huge online repository.

PicMonkey

PicMonkey (picmonkey.com) is a free online photo editor that is able to import photos from your Mac, or a Dropbox, Facebook or Flickr account. It includes an auto-adjust feature that enables you to make one-click improvements to your images. It also includes tools that enable you to crop, sharpen, resize and adjust the colours in your photo.

The app's portrait tools enable retouching of skin, removing blemishes and even giving someone a spray tan. You can dramatically alter the look of your pictures with a cross-process effect, giving them unusual contrast and colours, and you can embellish them with text, an overlaid texture or a frame.

The basic editing tools are free, though you'll have to put up with banner ads. For \$4.99 (about £3) per month or \$33 (about £21) per year, the Royale version removes ads and has more filters, fonts, and themes.



You don't even have to register to use the editing tools in the free version of PicMonkey.

3D MODELLING

CINEMA 4D

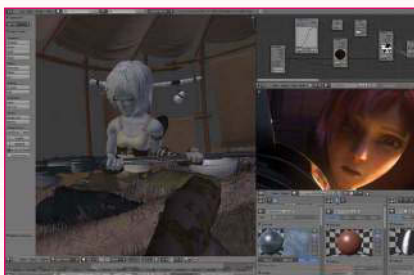
**SAVING
£600**

Blender

FREE Blender Foundation, blender.org



Blender is an open-source 3D animation and modelling tool. It incorporates a full game engine, enabling you to create a 3D game inside the app. It has photo-realistic shading with support for Open Shading Language, and it provides shaders for glass and translucency. A comprehensive set of rigging tools makes posing characters easy, and a pose editor and sound synchronisation enable you to bring your characters to life.



VIDEO EDITING

FINAL CUT PRO X

**SAVING
£229.99**

Lightworks

FREE EditShare, lwks.com



Move over Final Cut Pro X. Lightworks boasts supports for formats from SD to 4K and it can import, render, and export in the background while you carry on working. It has real-time effects, multi-camera editing and an interface that's customisable. There's a wealth of help in the form of tutorials at <http://bit.ly/mf289lightworks> to get you started. The Pro version (£249.99) adds support for hardware from Blackmagic, AJA and Matrox.



VIDEO EDITING

BBEDIT

**SAVING
£33**

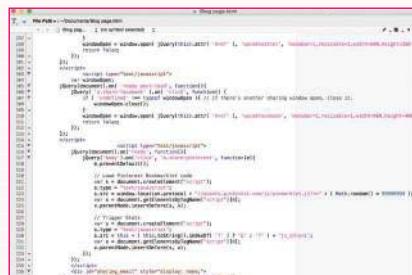
TextWrangler

FREE Bare Bones Software, barebones.com



BEdit has been the de facto text editor on the Mac for over a decade. TextWrangler is its free sibling and yet still packs in syntax colouring, cold folding – where you can show and hide sections of code – and direct access to files stored on FTP servers.

There are some tools missing from BEdit, such as its Scratchpad ability to read from and write to Zip archives, but TextWrangler is a free app that should be in every Mac user's arsenal.



MUSIC MAKING

LOGIC PRO X

**SAVING
£149.99**

Studio One

FREE PreSonus, presonus.com



Studio One is undergoing something of a transition, and the new free version, now called Studio One Prime, wasn't available as this issue went to press. However, it promises unlimited audio tracks, virtual instruments, FX and buses. It also enables real-time audio time stretching, resampling and normalisation. Nine audio native effects will be accompanied by a single virtual instrument. Going by its predecessor, Studio One 2, Prime will be worth your time.



FTP APP

TRANSMIT

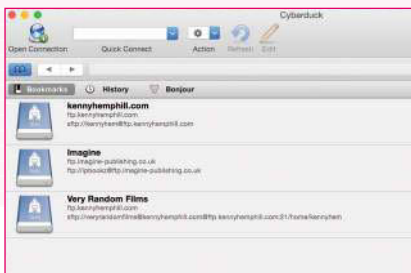
**SAVING
£25.49**

Cyberduck

FREE CyberDuck, cyberduck.io



Cyberduck costs £16.99 from the Mac App Store, yet it's available for free (or with a donation) from its website. It's used to transfer files to and from FTP, SFTP, and WebDAV servers, and to Amazon CloudFront and S3, Google Cloud Storage and Rackspace Cloud Files. Servers can be bookmarked and added to Finder for quick access, and files can be edited directly from a server. There's no two-pane view of local and remote files, but the app is otherwise excellent.



AUDIO EDITING

ADOBE AUDITION

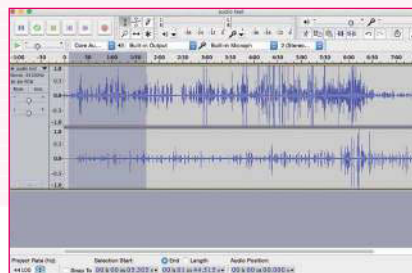
**SAVING
£17.15/
MONTH**

Audacity

FREE Audacity Team, audacityteam.org



One of the longest-standing free apps for OS X, Audacity is the perfect tool for making quick edits to audio files. The most recent version, 2.1, adds real-time previews of audio Unit and BST effects. It also features a new noise removal tool, and the Spectral Selection feature allows you to click and drag to select frequency ranges to manipulate, as well as time periods. If you need to edit audio on a Mac, this is the best place to start.



When it's worth paying

Affordable paid apps can return many times your investment

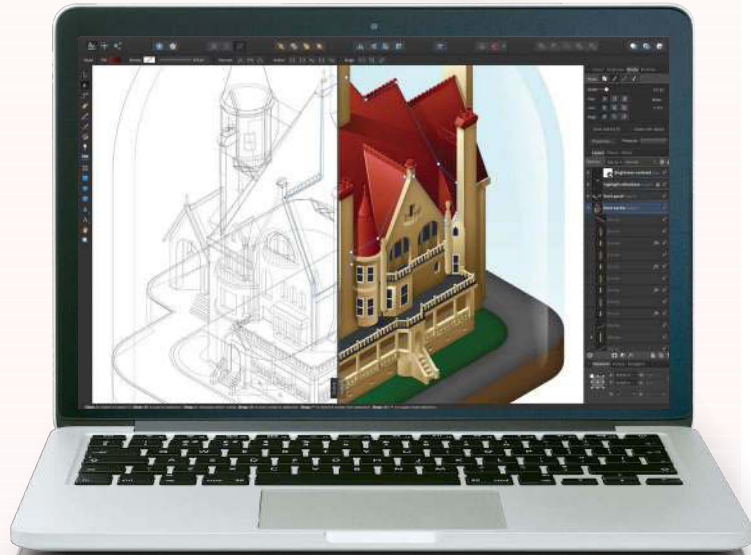
Although we've been singing the praises of free software in this feature, that isn't to say you should ignore every app that has a price tag attached. These days you can buy highly capable apps of all kinds at affordable prices; something that might be attributed to

Apple's app stores skewing prices downwards. Many of these apps are far more ambitious than their price and your previous experience of low-cost software might suggest. We're talking about the likes of Affinity Designer, Pixelmator and OneNote, which are strong, capable rivals to big names such as Adobe Illustrator, Adobe Photoshop and Evernote. Spending a relatively small amount encourages developers of these apps to continue investing effort in new features, which these days often come at a steady pace, and often without having to pay for a whole new version.

Affinity Designer (£39.99, Mac App Store) was a great app even from the start, yet features added since version 1.2 have added significantly to its appeal. That version brought the ability to set text on a path, dashed lines, a corner tool, and vector slice export. It enables your undo history to be saved with documents, and features a new pixel alignment mode to aid user interface and web design. Version 1.2.1 added support for Apple's Force Touch trackpad on the new MacBook and MacBook Pro, enabling you to paint with pressure sensitivity without buying specialist hardware.

Microsoft's OneNote (free, onenote.com) may not be as popular as Evernote, but it still has a great deal to offer. For a start, it doesn't impose a 60MB monthly limit on uploads, as Evernote's free tier does. Its latest version has the ability to search handwritten notes, and can record and play audio notes.

These days,
apps often add
new features at
a steady pace
at no extra cost



Already a capable app for designers in its initial release, Affinity Designer continues to develop at a pace with new creative tools and leveraging Apple's Force Touch trackpad.

Djay (algoriddim.com) gained a ton of new features in version 1.1, including the ability to create video mixes, not just audio. It also supports an extended range of hardware controllers, and its media library has been beefed up by integration with iTunes and Spotify and video importing.

Pixelmator (£22.99, Mac App Store) goes from strength to strength, with version 3.3 adding support for Handoff so you can switch between editing an image on your Mac and your iPad. It supports Yosemite's Extensions too, boosting its value by making its Repair tool available within other apps.

When it comes to annotating images, Napkin (£29.99, Mac App Store) is a good alternative to Apple's Preview. Version 1.5 adds two new visual styles when redacting information, with a choice of blurring or pixelating an area for a subtler aesthetic, rather than simply filling it with black. It also enables images to be cropped within the app, so you no longer have to open them in another tool to do that, and it follows the lead of many other good Mac apps by enabling you to match the style of surrounding text

wherever you paste.

1Password stores a wider variety of information than iCloud Keychain yet still syncs it between your devices.



Finally, version 5.3 of 1Password (£25.99, Mac App Store) is more tempting than ever as a replacement for iCloud Keychain, with improvements to the accuracy of filling out your identity in online forms, and new field types to store more varied data in your keychain.



Pixelmator is an excellent example of OS X Yosemite's Extensions feature, which makes the app's Repair tool available from within other software.

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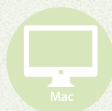
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IMPROVE

BBQ Bill

Barbecue (also barbeque, BBQ and barby) is a cooking method and apparatus. While there is a vast degree of variation and overlap in terminology and method surrounding this form of cooking, the generally accepted difference between barbecuing and grilling is in the cooking time and type of heat used. Grilling is generally done quickly over moderate-to-high direct heat with little smoke, while barbecuing is done slowly over low, indirect heat and the food is flavored by the smoking process.



“Apple’s new Photos app offers some great tools for making beautiful printed photo albums”

Turn virtual photos into real ones [p46](#)

THIS ISSUE’S EASY-TO-FOLLOW GUIDES



Using styles in Pages

Make your text documents slick and consistent using Pages’ built-in Styles function [p44](#)



Create a printed photo album

Collate your photos into an album, then create a bound book for friends and family [p46](#)



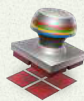
Master Affinity Designer

Part two of our series digs a little deeper into the brush tools of this vector illustration app [p50](#)



Back up all of your Macs

Use OS X Server to centralise Time Machine backups from all of your computers [p52](#)



Migrate Windows to a new Mac

Use Winclone to transport an entire Boot Camp installation rather than starting from scratch [p54](#)



Evernote power tips

Get more from this incredibly useful tool on both iPhone and Apple Watch [p56](#)



Archive photos to Flickr

With 1TB of free space, you can use this free service as a backup for your precious pics [p58](#)



Automate tasks with Editorial

Automate repetitive text- and image-processing workflows in this brilliant productivity app [p60](#)

Do more with styles in Pages

Make your documents more consistently readable with text styles

SKILL LEVEL

Taking things further

IT WILL TAKE

30 minutes

YOU'LL NEED

OS X 10.9 or higher,
Pages 5.0



When it comes to good design, less has always been more, with simplicity and clarity the watchwords

to follow. That applies to more than just the physical layout of your pages – it's also critical when deciding what text styles to use.

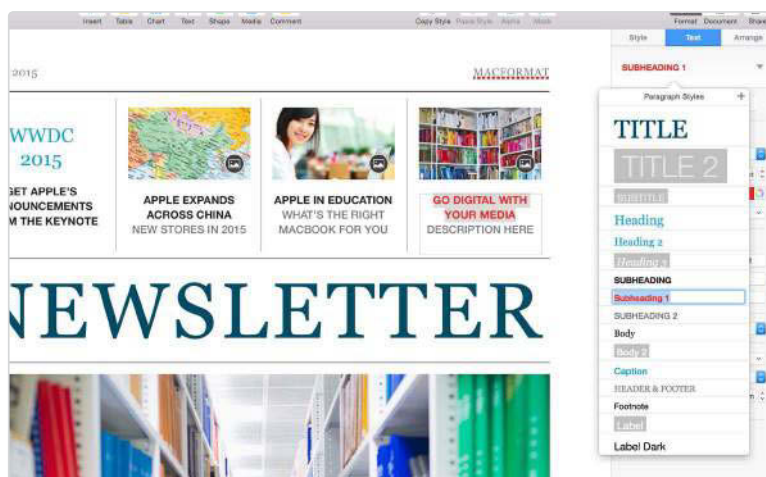
Typography is more than simply choosing the right font to use too. You need to remember to apply a consistent size, style and spacing to each text element, so readers aren't left confused by unexpected changes to the way your pages look. There's more as well – should long words be hyphenated at the end of lines, for example? And how should text be aligned when displayed in columns: left or justified?

Finding your style

It's hard enough determining what these rules should be, but enforcing them would be practically impossible if you had to manually check these elements each time you created a new document or typed a new block of text. Thankfully, Pages makes it easy to manage typography through the use of styles, which enable you to build up a collection of typographical elements for each section of your document.

Every document comes with styles in place, which originate from the original template. There are three broad types, the key one being paragraph styles, which affect how your text is styled. There is also specialised styles for lists (bulleted and numbered), while styles can also be applied to other objects, such as charts and tables.

You can apply styles to any object, allowing you to build your own page furniture.



When you create a new style it's automatically based on the currently selected text.

Take Pages' blank A4 template as an example: this comes with 12 paragraph styles, ranging from body text, title and sub-title to caption, footnote and label. You can view these by opening the Format Inspector and switching to the

Styles save you time while ensuring consistent and professional documents

Text tab – here you'll find each style's attributes are split into three sections.

The first is Style, which details the style's font, including its size, colour and character style, such as italics or underlined. It also includes detail on how text is aligned on the page and how large the spacing is between each line. There's also an option for including a bulleted or numbered list style as part of the paragraph style.

More please

The Layout section comes with options covering text indentation, tabulation and text box borders. Finally, the More section allows you to set rules for pagination breaks, hyphenations and ligatures, plus define what style the

following paragraph should use (you could have body copy follow from a sub heading, or sub-title follow from a title, for example).

Defining all these elements under a single style makes it easy to ensure each separate part of your document looks the same, which you can then extend to other styles, and your entire document.

The joy of text

When you start to type into a document for the first time, the paragraph style is likely to be set to body text. You can style this text in the usual way – italicise certain parts or underline others, for example – to allow you to make minor changes to individual words or sections. If you want to switch to a completely different style, then it's a case of choosing the appropriate style from the Format Inspector.

Speed things up here by allocating keyboard shortcuts to commonly used styles. To do so, click the downwards facing arrow next to the current style name to reveal the Paragraph Styles dropdown menu. Then roll your mouse over the target style and click the right-facing arrow to reveal a flyout. Select Shortcut to assign one of the function keys, from [F1] to [F8], to this style.

With the basics now in place, read on to find out how to start modifying and managing styles in Pages to meet your own ends. **Nick Peers**

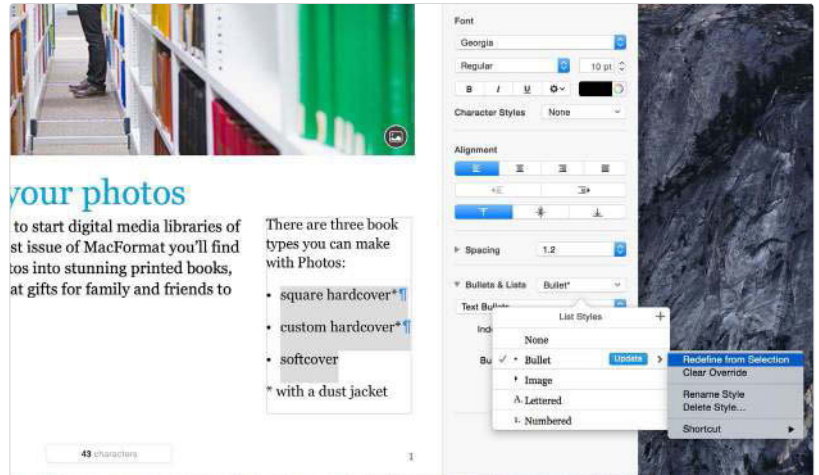
HOW TO | MODIFY AND MANAGE STYLES

1 Modify existing styles

There are two ways to edit existing styles in Pages. If you're changing one or two elements the simplest thing to do is select a piece of text, open the Format Inspector and select the style you wish to edit from the Text tab. Now use the Style, Layout and More sections to make the changes you wish – as you do, you'll see an asterisk appear next to the style name at the top of the screen with a conveniently placed Update button next to it. Click the Update button at any time and the style itself will be modified. Any text on the page formatted with that style will be updated too. Use **⌘ + Z** to undo any unwanted changes.

The other way to update a style is to take it from some previously styled text. To do this, first select the text in question then click the downwards-facing arrow next to the current style name to reveal the Paragraph Styles list. Roll your mouse over the target style, click the right-facing arrow and choose Redefine from Selection.

The arrow button reveals two more useful options. Rename Style allows you to give your modified style a different name, such as Paragraph Body or Box Title, while Delete Style does what it says on the tin. If you choose to delete a style currently in use, you'll be prompted to select a replacement style for the text using it. Pick the new style from a dropdown list, click OK, and your text will update.



Bullet and list styles are created and edited independently of paragraph styles, then linked to them.

a menu similar to the Paragraph Styles dropdown, offering the same options for modifying, rename, creating and deleting list styles.

First, select the bullet or number style you wish to modify from the drop-down menu. Next, expand the section by clicking the right-facing arrow to the left of Bullets & Lists, to reveal context-sensitive options based on the type of bullet or number scheme you've selected. You can, for example, change the image used for an image bullet, or determine the type of number to display along with spacing, colouring and other formatting options. Once done, click the Bullets & Lists drop-down menu again to reveal an Update button next to the list type you've modified. Click this to make your change.

The process is similar for creating your own custom table styles. In this case, create a table in your document, then use the controls offered in the Format Inspector to style it accordingly. You can then either overwrite an existing table style by right-clicking it under the Table tab and choosing 'Redefine Style from Selection' or click the left-facing arrow to reveal an option for creating a new table style by clicking **+**.

Last but not least, any object used in your Pages document can be styled in a similar way – just look out for the controls offered on the Format Inspector, which work in the same way as they do for tables.

2 Create new styles

Pages makes it easy for you to create styles from scratch too. Any new style you created is automatically based on the currently selected paragraph in your document, so if you've already formatted text to the new style you want to define, make sure the mouse cursor is placed somewhere within this paragraph first.

Next, click the downwards arrow next to the current style on the Format Inspector to reveal the Paragraph Styles list and then click **+**. A new style will appear in the list, named after the paragraph's current style with a '1' added (Body 1, for example). It's pre-selected and highlighted so you can quickly rename it to something more descriptive.

When creating or modifying a style, remember a few golden rules: first, restrict your styles to one or two fonts and use variations, such as condensed for captions and bold or black for headers. Second, choose your font based on how it performs as body text, as this usually makes up the bulk of text on any page. And finally, if you're struggling with tweaking the different elements – point size, spacing, text alignment and so on – a set of handy guidelines can be found at bit.ly/typog-rules.

3 Beyond paragraphs

You can define styles for other page elements too. List styles work with both bulleted and numbered lists, which can then be used to form part of a paragraph style too. Access these from the Style tab in the Format Inspector's Text section. Here you'll find the Bullets & Lists section along with

JARGON BUSTER

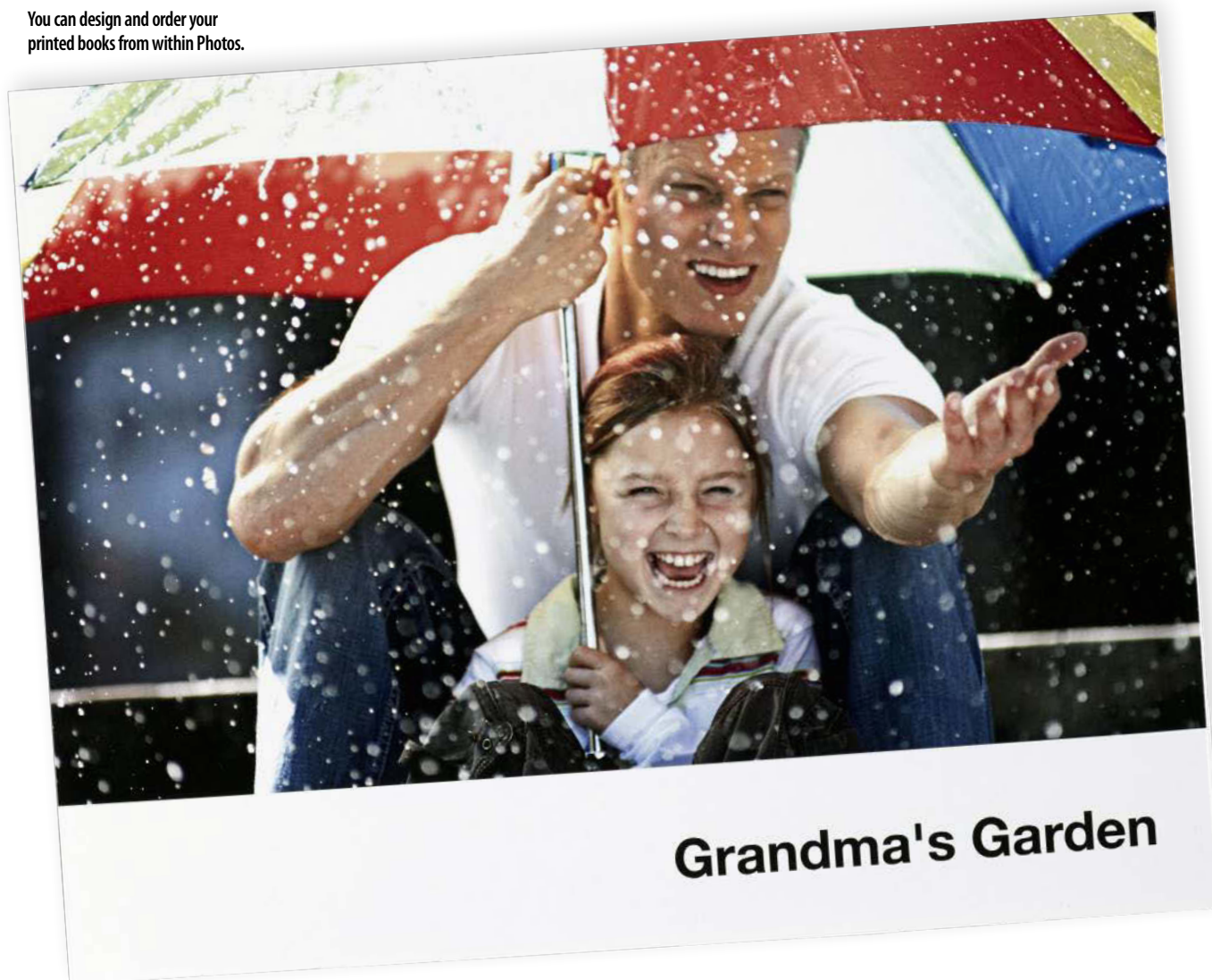
Style is a set of editable attributes that can be quickly applied to an object to help deliver a consistent look and feel across a document. All styles – including paragraph styles – are viewed and managed in the Format Inspector sidebar.

4 Build your own template

You've seen how Pages makes it possible to build custom styles into a document. When you save your document, those amended styles are saved with it, but you can go further and embed these styles into your own custom templates too.

Once you've set up your styles as you want them, open the File menu and choose Save as Template. The default choice allows you to add the template to the Template Chooser (which also makes it available to your other devices via your iCloud account), or you can simply save it to your computer. Now you'll have easy access to your carefully crafted styles whenever you need them, simply by selecting this template.

You can design and order your printed books from within Photos.



Creating albums from Photos

Easily design and order photo albums and cards using the Photos app

SKILL LEVEL

Anyone can do it

IT WILL TAKE

A few hours

YOU'LL NEED

OS X 10.10.3 or higher



Apple has talked a lot about its new Photos app for the Mac, and how it uses iCloud Photo Library to store your photos online so you can share them with others. But that doesn't mean traditional printed photography has gone out of style. In fact, digital photography has made it even easier to use services such as PhotoBox and Moonpig, which allow people to upload their photos and design personalised photo books, calendars and greeting cards.

If you have a Mac you can do this all yourself, using the creative tools in Photos. Of course, iPhoto also had tools

for designing and printing photo books and other documents – and most of the design tools we show you here are still available in iPhoto if you haven't yet upgraded to Photos – but Photos puts a greater emphasis on creative projects

with a new Projects tab that sits alongside the other options for photo-editing and online sharing. You can even order your printed books from within Photos, using Apple's own UK-based printing service. **Cliff Joseph**

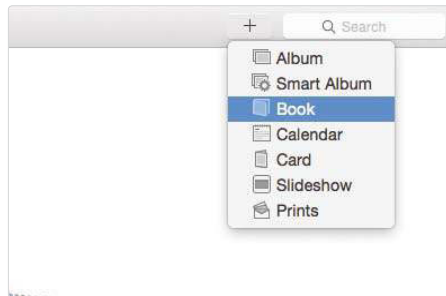


HOW TO | CREATE A PHOTO BOOK



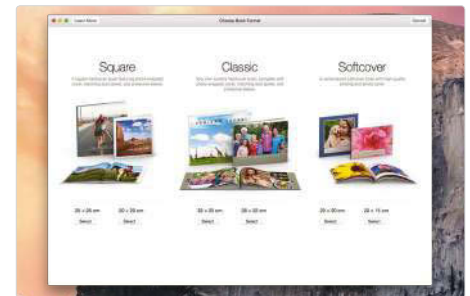
1 Projects tab

As with iPhoto, Apple's new Photos app makes it easy to share photos online. But sometimes it's good to do things the old-fashioned way, so Photos includes a Projects tab that helps you design and print high-quality photo books and other documents.



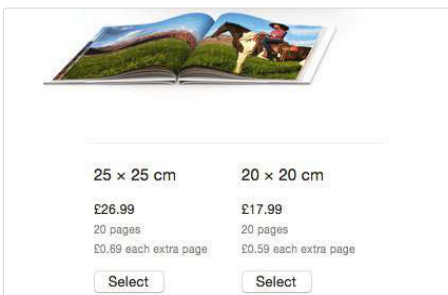
2 Book-keeping

Click **+** in the top-right corner of the Photos window to create a new project. There are several options here, including the ability to create video slideshows, printed calendars and cards. However, we want to create a photo album – which Photos refers to as a 'book'.



3 Classic design

Photos can design books in a number of formats. The Classic style is a high-quality hardcover with a wide, rectangular layout that includes a dust-jacket and protective sleeve. You can also opt for a smaller, square hardcover book, or a less expensive softcover book.



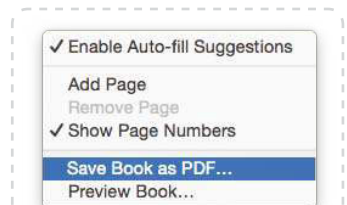
4 Pages and prices

Photos can check online and tell you the latest prices for various formats. Prices start at £6.99 for a softcover book, and go up to £34.99 for the largest Classic book format. Prices include 20 inside pages, plus the front and back covers, but you can pay extra for more pages.



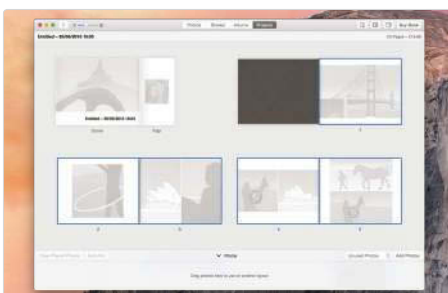
5 Templates themes

Once you've chosen the format you will be presented with a series of themes. These are templates with different layouts for the front and back covers, and inside pages. You can still customise the layout later, so for now just choose any theme you like the look of.



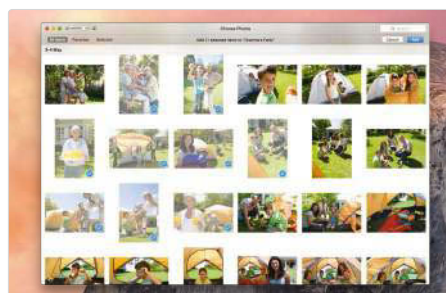
PRACTICE PRINTS

You can get a preview of your printed book by pressing **⌘** and clicking on any page in the book. This allows you to save the book as a PDF file so you can get an idea of how it will look, and maybe print out a few test pages as well.



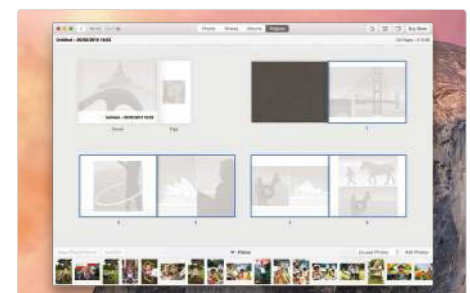
6 Instant layout

Here's the plan of our book. Each page has a slightly different design to add variety but, as mentioned, you can change the layout as you go along. The next step is to find the photos we want to use in the book, so we just click the 'Add Photos' button in the bottom-right corner.



7 Adding photos

Photos now takes us into its main library and shows us all our photos organised by date. We can browse through them and click on ones we want to use, and these are highlighted with a blue tick mark. We can choose as many photos as we want, and then just click the 'Add' button.



8 The in tray

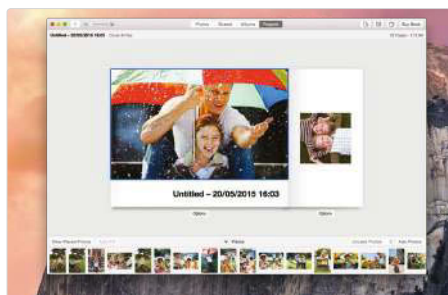
Photos are placed in the tray at the bottom of the screen. You can drag and drop photos from the tray onto a page. You can also select multiple photos then click the Auto-Fill button. Photos will try to select the best photos for each page and insert them automatically.

HOWTO | CREATE A BOOK COVER



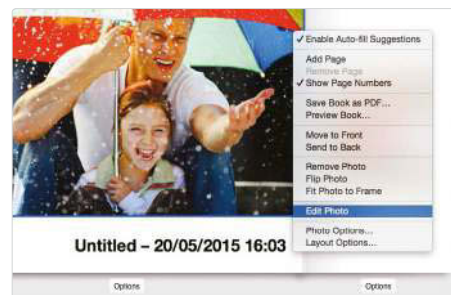
1 Cover spread

Let's start with the cover. The book layout is organised into groups of two pages – known as a 'spread' – and double-clicking on a spread will zoom in to give a close-up view of those two pages. The cover is important, so find a good photo, rather than just using Auto-Fill.



2 Rainy days

We've found a shot we like for the cover, and put a smaller photo on the inside flap. However, that cover shot is a bit too dark, and we need to give the book a title. Fortunately, Photos still allows you use all of its normal editing tools when working on your projects.



3 Editing options

There are several ways to switch to editing mode. You can click on the cover photo then press the Options button below the page to open the Layout Options palette. But we find it quicker to **ctrl**-click on the photo (or tap two fingers on a trackpad) and select Edit Photo.



4 The bright side

That takes us into Photos' standard editing window, where we can quickly adjust the brightness and contrast. We can use other editing tools as well, such as filter effects, red-eye removal, or perhaps crop and resize the photo so it fits the page layout better.



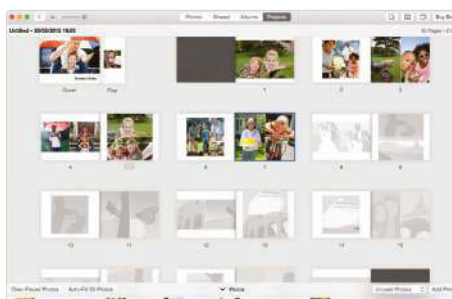
5 Text tools

When you've finished adjusting the photo hit 'Done' to return to page layout mode. Then type the book title into the text box under the photo. If you double-click on the text you'll open the Text Option box, which lets you choose typeface, size, colour and spacing.



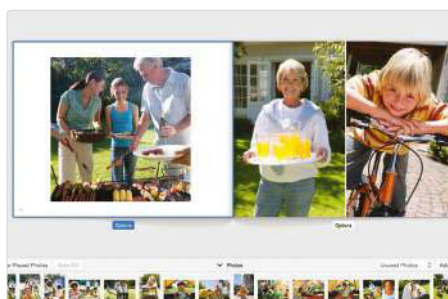
HIDDEN EXTRAS

Apple's prices for printing books, calendars and cards compare well with rivals. PhotoBox charges for extras, such as £5.50 to remove its logo from your books.



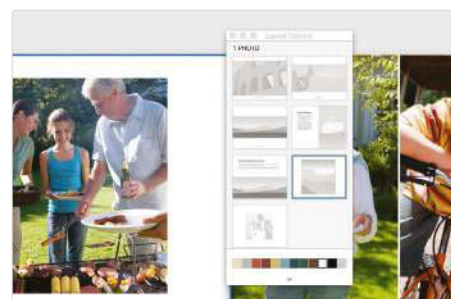
6 Automatic additions

To leave this cover spread and look at the rest of the book, click the left-arrow symbol up in the top-left corner of the Photos panel. Then use Auto-Fill to quickly fill in the next few pages. These photos don't look too bad, but we'd still like to make a few changes here and there.



7 Changing pages

Auto-Fill sometimes goes a bit wrong, and it looks odd having a photo floating on its own in the middle of the left-hand page of this spread. But you can edit the layout of each individual page. To do this, just double-click on the white background of the page.

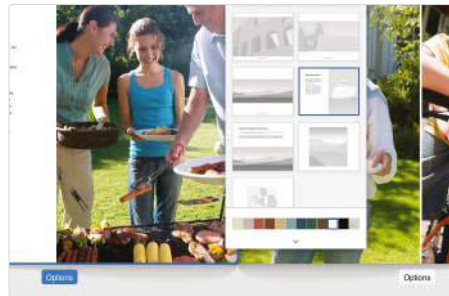


8 Editing layouts

That double-click opens the Layout Options palette. This page only has a single photo on it, so the palette starts by highlighting the current layout option in blue, and shows us layout variations that also use just one photo. Some layouts include room for additional text.

HOW TO | CREATE PAGE LAYOUTS**1 Adding text**

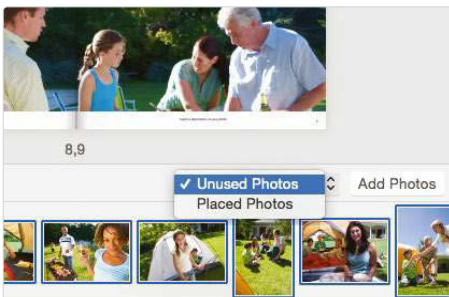
You can change the page layout by clicking the little previews in the Layout Options palette, and Photos will instantly change the layout while keeping that original photo on the page. You can use the standard Undo command to go back to the original layout if needed.

**2 In contrast**

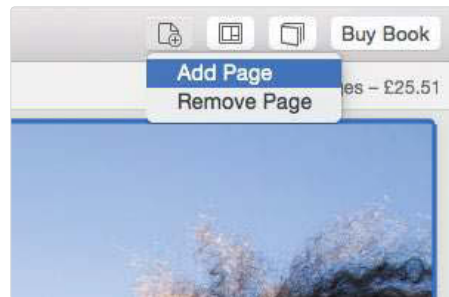
You can also change the page layout completely. Scroll down in the Layout Options palette to see several layouts that use multiple photos – up to 16 on a page. We'll contrast the two vertical photos on the right-hand page with two horizontal photos on this left-hand page.

**3 A long stretch**

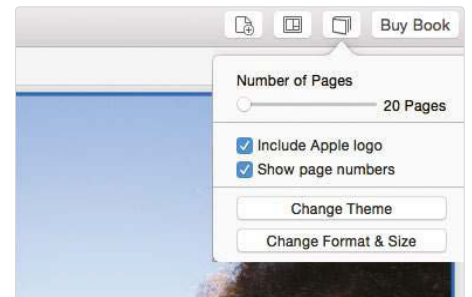
Keep scrolling down the Layout Options palette to see other layouts to experiment with, including text pages and even maps that you can zoom in on to show locations visited. There are also some nice 'spread' layouts that allow you to stretch photos right across two pages.

**4 Keeping track**

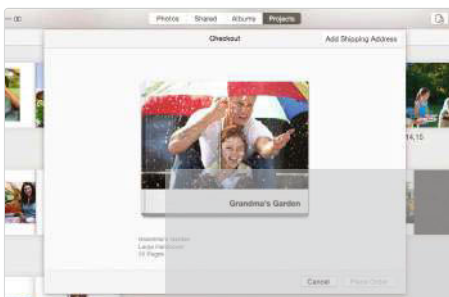
You can use the Add Photos command to fetch more photos whenever you want. To help keep track of your photos there's also a set of menu commands that adjust the tray so it only shows photos already placed in the book, or only photos you haven't used yet.

**5 Adding pages**

The standard themes are all for books that have 20 inside pages, plus front and back covers. You can add extra pages using the command shown here – and Photos will update the cost of the book. You can remove pages as well, but you can't drop below 20 pages.

**6 Quick change**

If you decide you're not happy with the design of your book, use this menu to change the entire format, theme, or size of it. Any photos or text you've already placed in the book will remain in place, but you may need to tidy things up a bit to match the new page layouts.

**7 Order book**

When you're happy with the design you can press the Buy Book button to place your order. Unfortunately, you're only allowed to pay for your book with a credit or debit card. You can't pay with iTunes gift cards or any existing credit on your iTunes account.

FINAL IMAGE

Websites come and go all the time – who can be sure that Facebook or Instagram will be around in a few years' time? However, your printed photo book will make a great keepsake or gift for family and friends for decades to come.



Master brush tools

In part two of the series, we add fish and sea weed to the tank

SKILL LEVEL

Anyone can do it

IT WILL TAKE

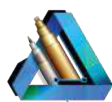
1 hour

YOU'LL NEED

Affinity Designer 1.2

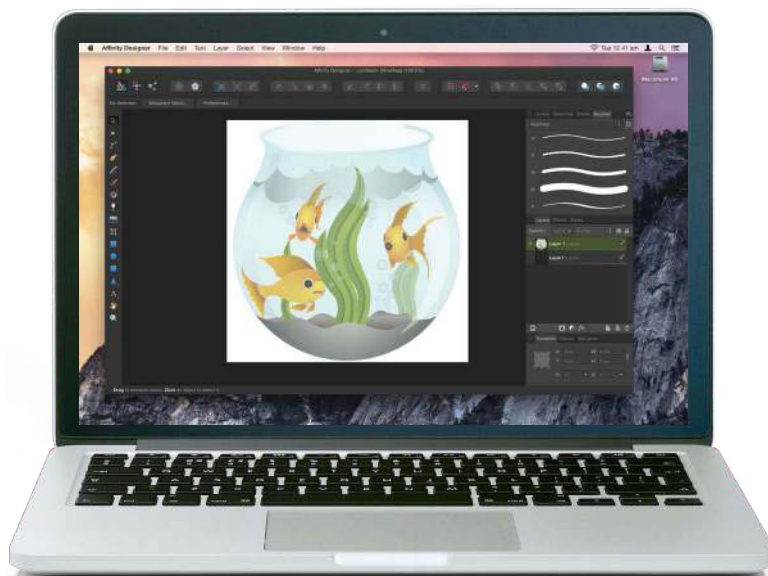
NEXT MONTH

Learn how to use Designer's Boolean features to create new shapes. See MF288 for part one of this series.



As this series progresses we'll be delving deeper into the mysteries of Affinity Designer and learning various skills as we go. In the previous issue we learnt about the versatility of the gradients and how you can use them to create the appearance of layers and depth. Here we'll be learning about how to use the brush tools as well as how to mask an area quickly while still retaining both layers. By the end of this part of the tutorial you will hopefully be confident enough to create your own fish, all of which will be swimming at different angles. You will also learn how to create a brush to make painting sea weed quick and enjoyable.

One of the aims of this part of the tutorial is to give you the tools and skills to enable you to experiment further. Hopefully you will have learnt enough to put your own stamp on your virtual fish tank. Why not create a tank full of brightly coloured tropical fish rather than goldfish? Or why not add a shark to the mix?



We've added fish to our virtual fish tank as well as some sea weed for them to hide behind.

By the end of this tutorial you'll be confident enough to create your own fish

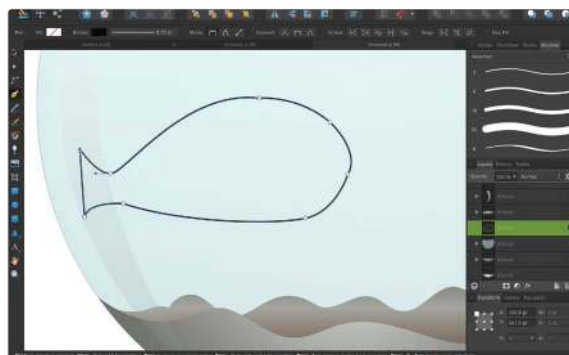
You can use Adobe Illustrator, Photoshop or whatever package you want to create images for the brushes. We're using Affinity Designer here, but this workshop should still work out just as well for you if you're using alternative software. **James Robinson**

HOW TO | CREATE FISH WITH BRUSHES

EXPORT IMAGE

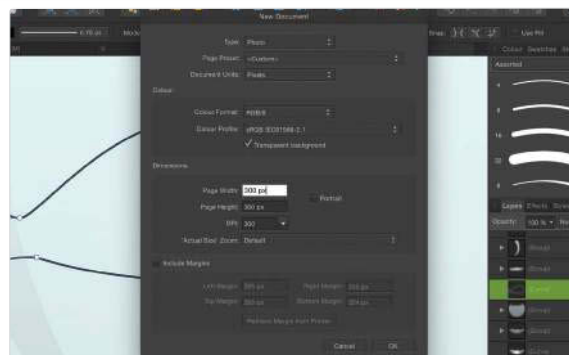
Affinity Designer has a very useful export function. It allows you to export a whole image, just a selection, or the selection with a background.

It also has numerous export formats from PNG and JPEG to PSD and SVG.



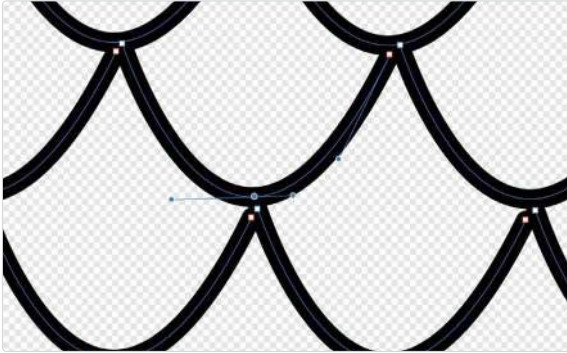
1 Starting the body shape

Using the Pen tool we learnt about in the first part of this tutorial, we'll need to create a rough outline for a fish. At this stage you only need the body – we'll be adding fins, eyes and the other fish later on. The fish looks pretty flat without any colour, so we'll need to create a gradient for his body.



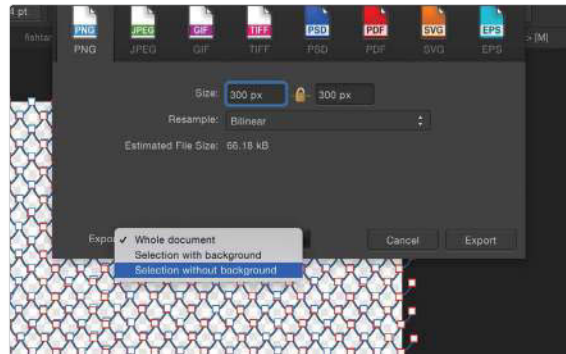
2 Creating the scales

Now we have a rough body shape (it can be refined later), we need to create a file to use for the scales. Go to the file menu and select New, make sure the image area is square and that it has a transparent background. It's also a good idea to leave the 'include margins' box unchecked.



3 Drawing the scales

If you're confident, draw enough rows of scales to fill the new canvas. If not, use the Pen tool to create them. With the Pen tool don't forget to use the Node and Corner tools to help refine the lines of the scales. It doesn't matter how many lines you draw, but you'll need to create a few.



4 Adding texture

Once you're happy with the scales you're ready to export it. To do this go to File > Export and make sure that you have the 'Selection without background' option selected in the bottom left-hand corner. As we only want to use the lines it's best to export it as a PNG.

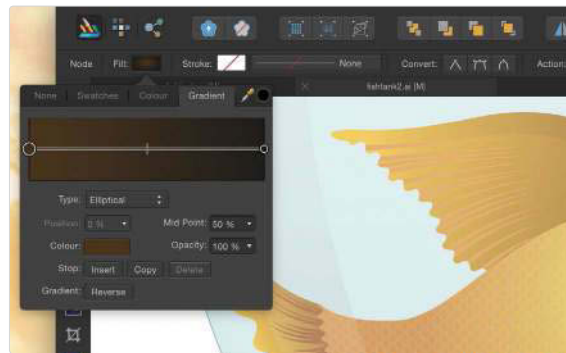
QUICK MASK

You can use a layer as a mask without losing anything from either layers. Just drag one layer over another and the top layer will act as a mask for the one you're dragging. This is a great way to preserve an entire layer while still masking it.



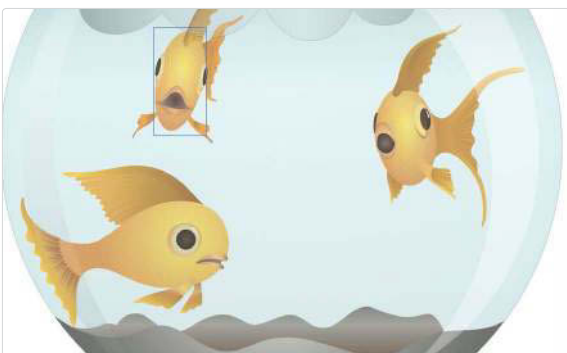
5 Scaling the scales

To use the scales as a texture, add them to the image by clicking on the Place Image Tool, selecting the exported scales image, then clicking to place it. Drag the layer over the fish body, to hide everything outside it. You can experiment with Blend modes to make them look more life like.



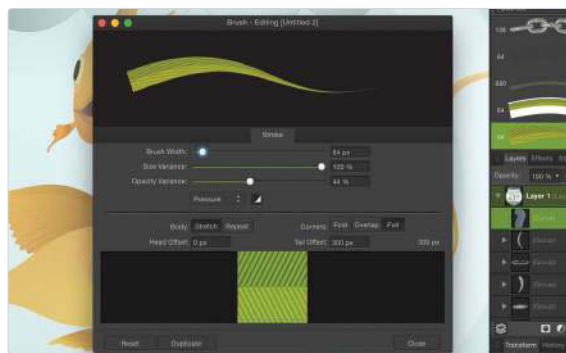
6 Adding eyes and fins

Our little fish won't get far without fins or eyes and a mouth would help him eat. Create eyes using the same technique as air bubbles (see last issue). The fins are created with the same technique as the fish body. We do the fins separately to have more control over them.



7 Adding more fish

The little fella might get a bit lonely on his own, so let's add a few more fish to our tank. It's a great way to practise what you've learnt so far, and you can have as many fish as you want swimming in different directions. We opted for three here as we're going to add some sea weed, too.



8 Creating sea weed

For sea weed, we use the same process as for creating scales, but here we give it a green background, and export the two together. After exporting, create a 'New Textured Image Brush' (to the right of the brushes tab). Double-click the new brush to edit it before using it to create a leaf.

JARGON BUSTER

New Textured Image Brush is a great feature. It allows you to create any vector image as a brush stroke and use pressure sensitively to vary the width of a stroke. You can even use a section of an image for a more detailed brush.

Back up all your Macs

OS X Server makes it possible to centralise Time Machine backups

SKILL LEVEL

Taking things further

IT WILL TAKE

30 minutes

YOU'LL NEED

OS X 10.6 or higher,
OS X Server 4.1
or higher



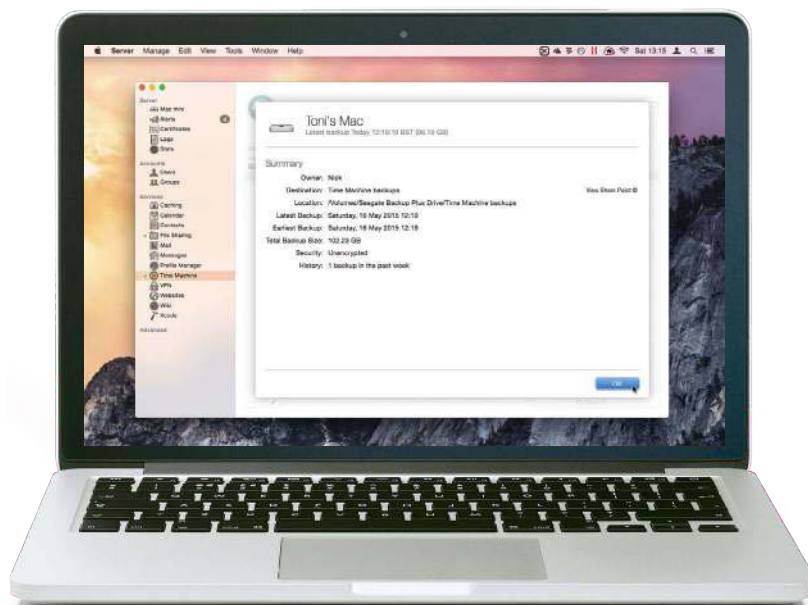
If you're the proud owner of more than one Mac – or you live in a multi-Mac

household – then you know that keeping all your machines backed up independently can be costly.

The obvious solution is to centralise your backups in one convenient location, enabling you to reduce the cost of maintaining separate backups for each Mac by sharing a single back-up drive. One route to achieving this is to buy a dedicated network drive, such as Apple's Time Capsule, but that's quite an expensive route.

Thankfully, there's an alternative: OS X Server (£14.99, <http://apple.co/1MEKGPL>). Install this on your main Mac – or an old, spare one – and it can be configured to give all the other Macs on your network access to its spare storage as a target for their Time Machine backups. It's also scalable, because you can add more storage, as and when you can afford it, to boost your back-up capacity.

It's relatively simple to set up and maintain. Once connected to the Time



OS X Server allows you to keep all your household's backups in one convenient place.

OS X Server makes one Mac available as a Time Machine target for others

Machine server, your other Macs will back up just as they would to a directly attached drive, albeit a bit slower over your network. It's also worth noting that backing up (and recovery, if needed) will only occur when the server is on and connected to your network. **Nick Peers**

HOW TO | SET UP TIME MACHINE IN OS X SERVER

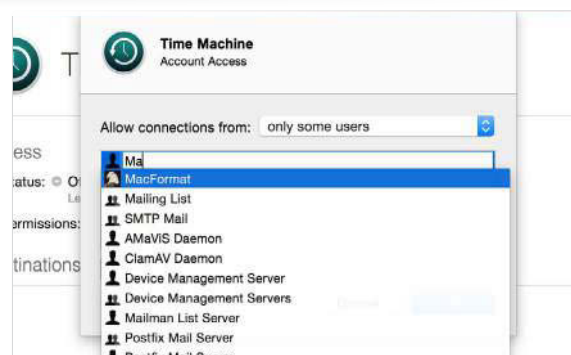
JARGON BUSTER

OS X Server uses an account's short name to verify services a person can use. It's based on the full name given when creating their account, but changeable. For convenience, match the short name of the account on their Mac.



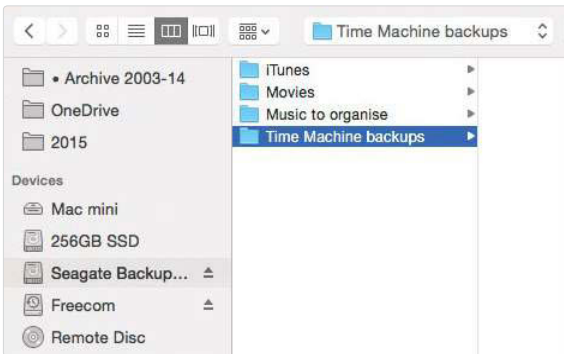
1 Create user accounts

Open Server from the Applications folder. Select Users under Accounts, then click + to set up an account for another person who wants to back up to the server. Match their full name and account name to the account on their Mac. Set the Home Folder option to 'None – Services Only', then click OK.



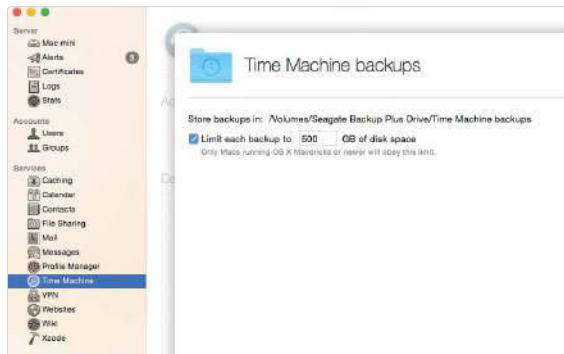
2 Choose who can back up

Optionally, you can restrict which accounts can back up to the server. Select Time Machine under Services, then click Edit next to Permissions and select 'only some users'. Click the '+' and enter the name of a user you want to grant access to the service. Repeat this for all users who need it.



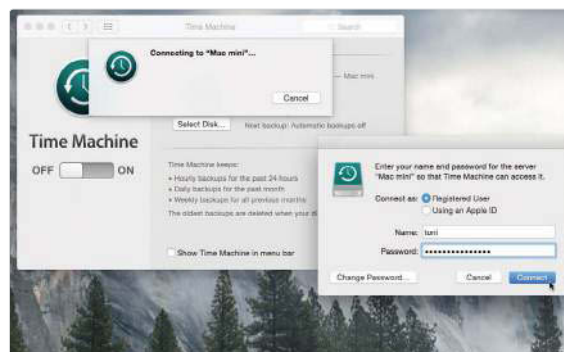
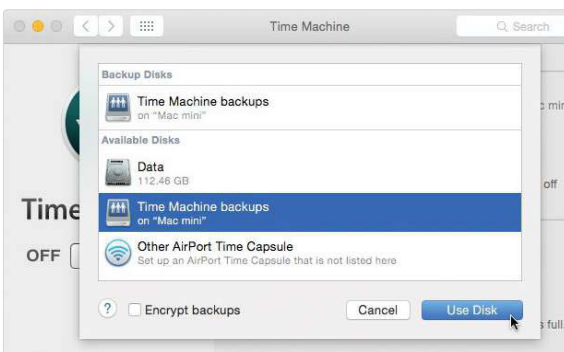
3 Pick a destination for backups

With Time Machine still selected under Services in the left-hand pane, flick the switch in the top-right corner to 'On'. You'll be prompted to choose a destination for your other Macs to store their backups. Click 'Choose...' to select the drive and folder you want to use.



4 Set storage limits

You can prevent Macs running OS X 10.9 or higher from using up all available space by enabling 'Limit each backup to' and choosing the maximum capacity an individual Mac can use. 500GB is suggested by default; lowering it limits how many backups (and file versions) each Mac can keep.

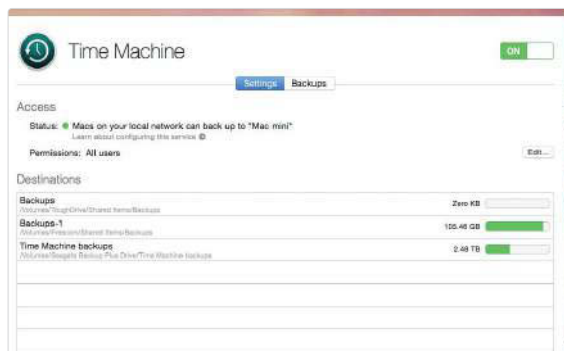


5 Ready for action

Time Machine's status will indicate your Mac is now able to act as a Time Machine target for other Macs on your network. Switch to another Mac, open System Preferences > Time Machine and click Select Backup Disk. Your server Mac should be listed. Select it and click Use Disk.

6 Authenticate and back up

Your server Mac will ask for authentication – this is the username and password you created in step one, so if the username matches that of the local user account, it'll be entered by default, leaving you to simply enter the password. Click Connect and this Mac will use the server for its backups.



7 Monitor and manage

Once the service is up and running, go to Services > Time Machine and switch to the Backups tab, where you'll see a list of connected Macs and the status of ongoing and complete backups. Double-click one to reveal more details about it, or right-click for an option to irreversibly delete it.

8 Manage storage

Server's Time Machine capabilities are scalable. If it runs low on space, plug in a new drive and click the + button on the Settings tab to set it as a destination for your Macs to use for backups. Note that multiple drives can be used for backups; Time Machine will use all their available capacity.

REMOTE ADMIN

Remotely control your server by running the Server app on another Mac. First, open the app on the server and click the server's name at the top of the sidebar, then Settings and turn on the remote admin feature. Run the app on another Mac and choose Other Mac to connect; giving the server a static IP address (in its Network preferences) can make it easier to establish a connection.

DRIVE SWITCH

When you add a drive to the server to increase available space for backups, inform anyone who depends on it that their next backup will be a complete one and take longer; existing backups aren't copied to the new drive.

Migrate Boot Camp

Move your entire Windows setup onto a new Mac with ease

SKILL LEVEL

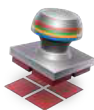
Taking things further

IT WILL TAKE

2 to 3 hours

YOU'LL NEED

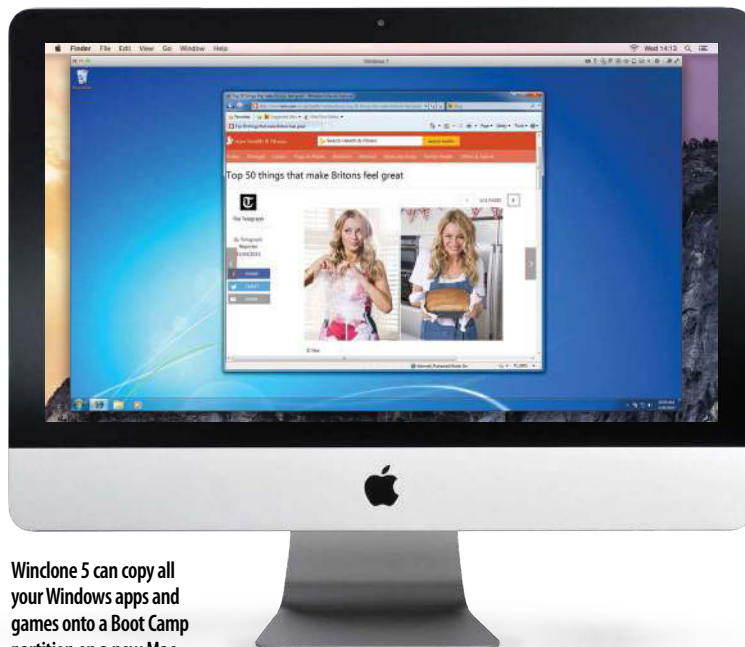
A Mac with an existing Boot Camp setup, a copy of Windows 7 or 8, Winclone 5 Standard, and a 16GB or larger USB flash drive



Apple's Boot Camp software allows you to start your Mac up in Windows, not just OS X. It enables the use of business apps that may not be available for the Mac, designers and developers can test websites and apps on Windows, and you can choose from many more games.

However, if you upgrade or replace your Mac, you need to start all over and reinstall Windows on the new Mac, along with all your Windows apps and games. That can take ages because some games are tens of gigabytes large. Then there's the trickiness of Windows' activation process. Apple's OS is free these days, but Windows still costs almost £100.

Winclone (twocanoes.com) helps transfer your Boot Camp partition, complete with all your apps and games, from one Mac to another. You'll need Winclone Standard (\$40, about £26), not the cheaper 'Basic' edition, but it can be a real timesaver if you've got a lot of software to transfer. It's also cheaper than buying a new



Winclone 5 can copy all your Windows apps and games onto a Boot Camp partition on a new Mac.

Winclone helps you transfer Windows with all your software to a new Mac

copy of Windows – if you originally bought a retail (boxed) copy of Windows then you can transfer the licence to a new Mac. However, note that if it was an OEM copy (provided with a PC), it's legally tied to the hardware it came with. **Cliff Joseph**

HOW TO | MIGRATE BOOT CAMP TO A NEW MAC

DRIVERS

Check that your new Mac works with your version of Windows – in other words, that Apple provides drivers for it. Unfortunately, some of the latest Mac models only work with Windows 8. See <http://apple.co/1JUZLO4> for compatibility.



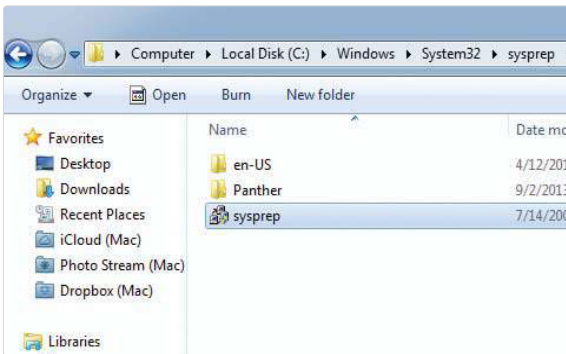
1 Boot Camp setup

Before transferring your old Mac's Boot Camp setup to a new Mac, open Boot Camp Assistant on the new one to create a partition for Windows and to download drivers to your empty USB flash drive. Once that's done, quit Boot Camp Assistant as we won't install Windows from scratch.



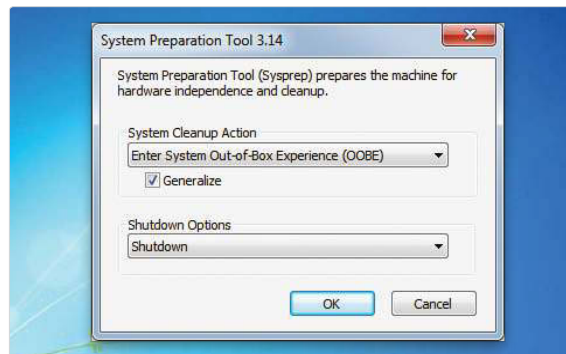
2 Opening Windows

On the old Mac, open Windows' Start menu (or Windows 8's Start screen) and type cmd to open a command prompt. Enter `chkdsk /b` to check your installation is healthy and can be copied with Winclone – if you're unfamiliar with `chkdsk`, read <http://bit.ly/mfwinclonetut>.



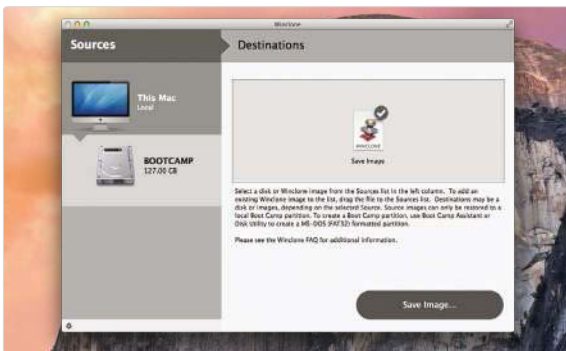
3 Windows drivers

Our Mac mini is quite old, so we need to remove the old Windows drivers – software that controls the processor, graphics card and other bits of hardware used in our specific model. That's a big task, but you can do it quickly with Sysprep, which you'll find in C:\windows\system32\sysprep.



4 Out of the box

Select the 'System Out-of-Box Experience' option and check Generalize. Select the Shutdown option and then click OK. This strips out the old drivers, leaving a clean version of Windows that you can install on any new Mac. When finished, Windows will shut down, and you can restart in OS X.



5 Boot Camp backup

Thankfully, things are more straightforward on the Mac side. Here, Winclone on our Mac mini has found our Boot Camp partition, so we just need to click Save Image to copy the Boot Camp partition to a file that we'll name 'Boot Camp Backup'. This will take a while with a large installation.



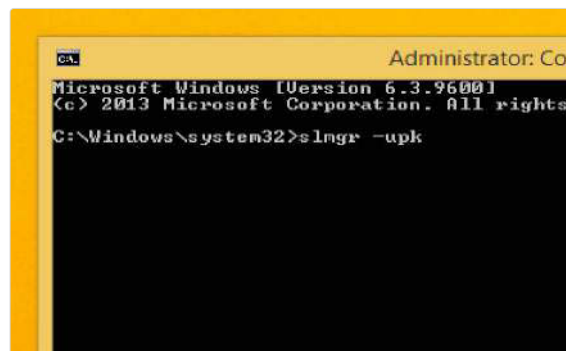
6 Restoring your image

Copy the image file onto an external drive, connect that drive to your new Mac and then open Winclone. Drag and drop the image file into the Sources panel and then click Restore to Volume to copy the image's contents onto the Boot Camp partition that we created in step 1.



7 Install the correct drivers

Now install the up-to-date drivers from your USB drive which are needed for Windows to get the best out of the new Mac's hardware. The Windows setup works perfectly on the new iMac, and the whole-system migration even carries over the save files that contain your progress in games.



8 Windows activation

On your old Mac, go to Start menu > All Programs > Accessories (Windows 7) or type cmd at the Start screen (Windows 8). Right-click Command Prompt and run it as an administrator. Enter `simg -upk` to remove the product key. You can then activate Windows on your new Mac.

QUICK BACKUP



Another handy feature of Winclone is the ability to back up your Windows user folder from Boot Camp to a folder on your Mac. You can configure it to back up hourly, daily or weekly, ensuring you always have access to your most important files in OS X.

JARGON BUSTER

We transferred our Windows image file via hard disk, but Winclone also allows you to transfer and install a Boot Camp image over a network. That's handy for business and education users who need to create a standard Windows setup that they can install onto multiple Macs.

Evernote power tips

Master one of the most useful iOS apps around

SKILL LEVEL

Anyone can do it

IT WILL TAKE

30 minutes

YOU'LL NEED

iPhone, Apple Watch, Evernote



For many, Evernote is indispensable. The ability to grab content from just about

anywhere, sync it and share it with any device linked to your account means you always have that crucial research information, recipe or checklist close to hand. Now Evernote is on the Apple Watch too, the notes are even closer to hand – literally and metaphorically.

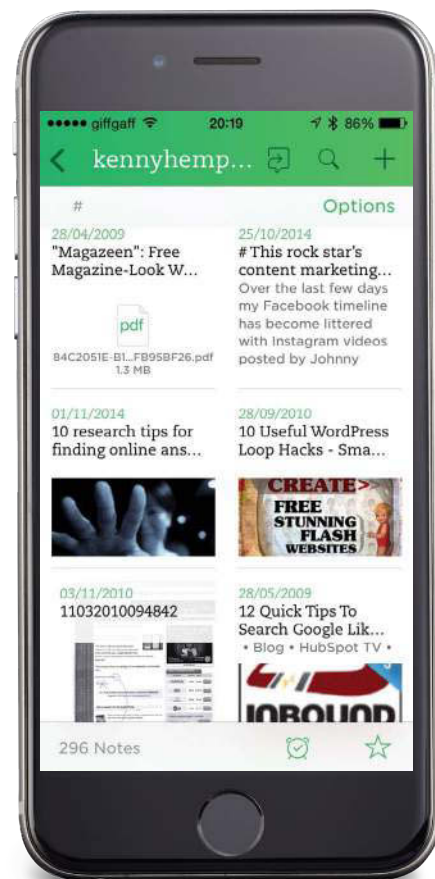
There's a lot more to Evernote, however, than just typing in new notes, making audio notes or grabbing clippings from the web. It's AppleScriptable, for example, so you can automate the creation of notes on your Mac using tools such as Automator and Hazel.

The iOS version has a Today widget in iOS 8 which allows you to create new notes without opening

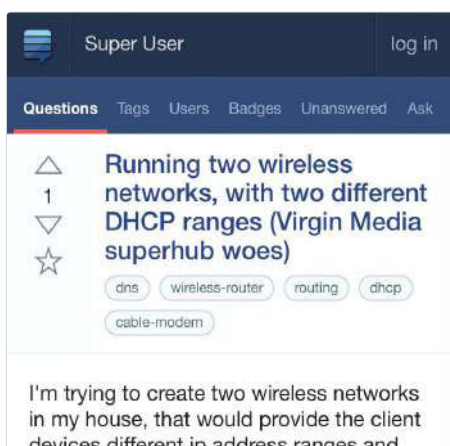
the app. Evernote has a chat facility so you can share ideas as well as notes, and Reminders so you can set alerts for notes. And if you allow it access to Location settings, it can tag notes with your location – a useful aide memoir if you tap only the briefest of details into a note.

There are other features limited to the Premium version of Evernote, such as support for Touch ID. But the free version is hugely powerful on its own. Here are three tips to get more from it. **Kenny Hemphill**

Evernote has a chat facility so you can share ideas as well as notes

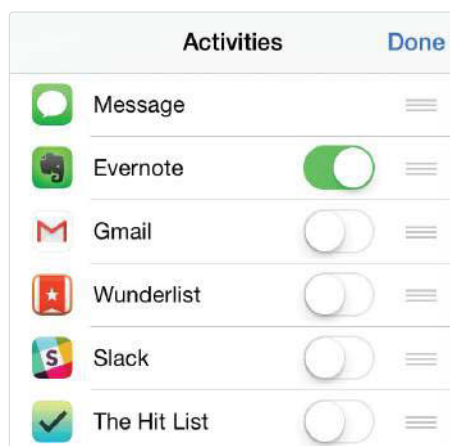


HOW TO | CLIP CONTENT FROM SAFARI



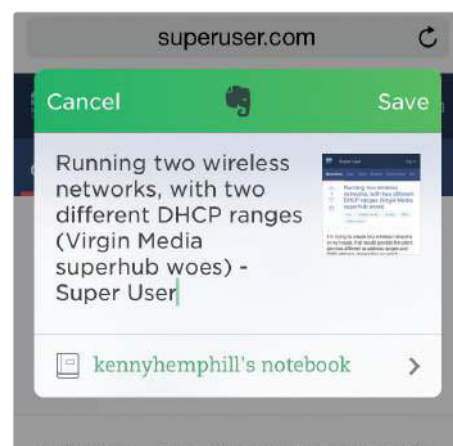
1 Find something to clip

Launch Safari and go to the web page you want to clip content from. We found instructions on configuring an AirPort Extreme router to act as a second router and want to save it. Tap the page, to display the toolbar along the bottom of the screen and tap the Share button. If Evernote isn't displayed in the top row, under AirDrop, tap the More button.



2 Add activity

When you tap More, you'll see a list of apps. Find Evernote and tap the switch next to it to the on position. If you're likely to clip notes often, tap on the three lines to the right of the switch, hold and drag it to the top of the list. Tap Done and the Evernote icon will be on the list of options. Tap it and you'll see a note has been populated with content from the page.



3 Clip it

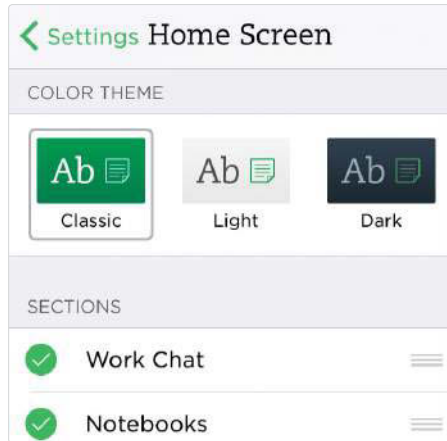
The main body of the note is the title of the web page. At the bottom is the name of the notebook where it'll be stored. If you have more than one notebook in your account and want to add it to a different one, tap the name to choose it. Unlike the desktop web clipper, there are no options for how the note is clipped, though you can edit the title. When you're done, tap Save.

HOWTO | CUSTOMISE EVERNOTE'S HOME SCREEN



1 Launch Evernote

When you launch Evernote, it displays snippets of information based on recent activity in the app. Along the top are quick access buttons for adding notes, but below are sections for Work Chat, recent notes, notebooks, and shortcuts. You can customise that, however. To get started, tap the cog icon next to the name of your account in the top-left corner.



2 Change home screen

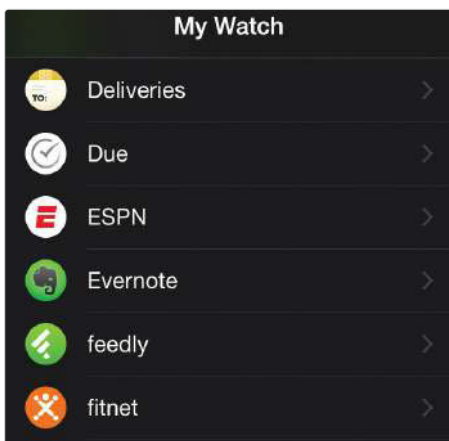
From the Settings page, tap Customize Home Screen. You can change the colour theme from its default green to a light or a dark grey. Then go to the Sections area. The sections ticked are those currently on the Home Screen. To remove one or more, tap the tick next to it. To add one, tap the empty circle to the left of it. You can't remove Notes though.



3 Show sync status

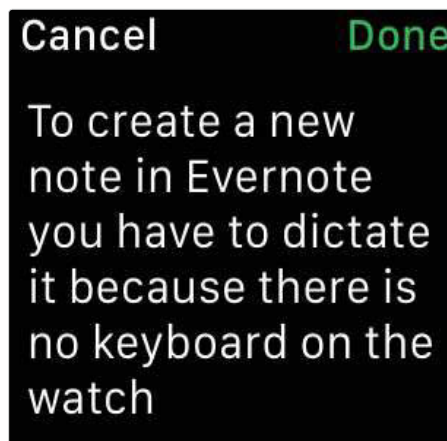
To change the order elements are displayed, tap and hold on the right of the one you want to move and drag it where you want it. In the Details section, switch elements on and off as required, depending on whether you want a summary of the notes in a section or not. At the bottom of the screen is an option to Show Sync Status. Switch it on if you think it useful.

HOWTO | USE EVERNOTE ON THE APPLE WATCH



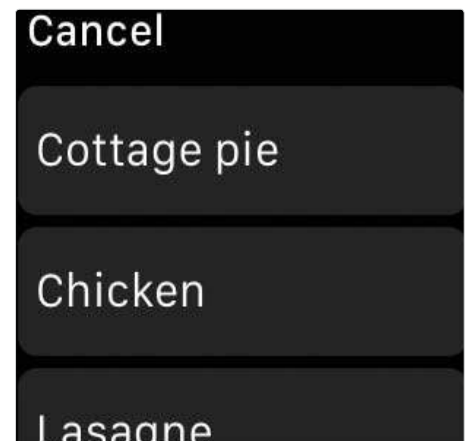
1 Add it to your Watch

Like every Apple Watch app, Evernote runs from the iPhone. You'll need to have it installed on your iPhone and be logged in. Go to the Watch app on your iPhone. Tap My Watch then scroll to Evernote and tap it. Set the slider to on. To receive notifications from Evernote for notes with alarms set, go to Notifications in My Watch, tap Evernote and slide that switch to on.



2 Add new notes

You either open the app and press \oplus . Or open the app, deep press on the screen, then tap the New Note button. To create the note, you have to use dictation, so once you've tapped \oplus , speak to the note and press Done when finished. Evernote will display the text on screen. Tap Done if happy and Evernote will display the Note. Tap Save.



3 Search for notes

As with the last step, you can either press the magnifying glass on the Home screen, or deep press then select it. Scroll through the keywords and if your search term is there, tap it. If it's not, you'll have to tap the microphone and dictate the search term. It is hit and miss. We found even though Evernote recognised what we said, it was unable to find relevant notes.

Archive photos to Flickr

Use the website's free 1TB of storage to back up and share your iOS snaps

SKILL LEVEL

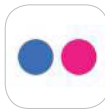
Anyone can do it

IT WILL TAKE

30 minutes

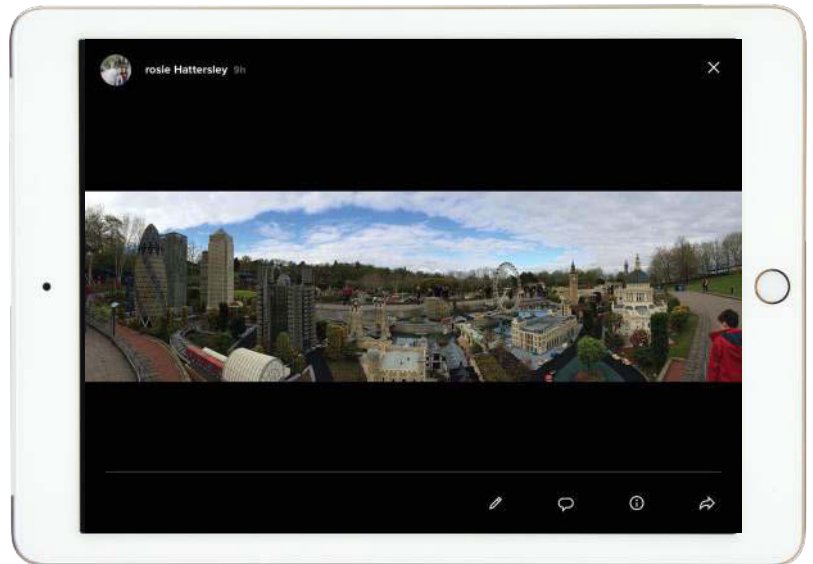
YOU'LL NEED

A Flickr account, Flickr app for iPad or iPhone, iPad or iPhone, a Wi-Fi connection



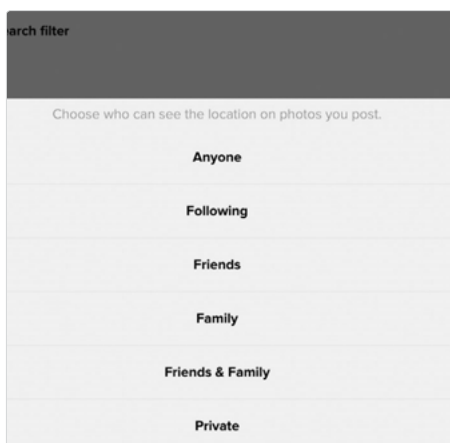
If you routinely sync your iPad and iPhone with your Mac and use iCloud storage, you might not be too concerned about losing your Apple device. It can cost a lot to store photos this way, though. And storing huge amounts of data slows your iPad or iPhone. Plus, it's no fun sifting through thousands of pics when you don't have the time to find a particular one.

Flickr is free and offers a whopping 1TB of storage. You can view slideshows online as well as on your iPad or iPhone, and you have full control over whether photos are private, shared with friends and family or with the wider world. The app's Auto-Uploadr function syncs your iPad and iPhone photos to your Flickr account, or you can upload individual photos from your Camera Roll. **Rosie Hattersley**



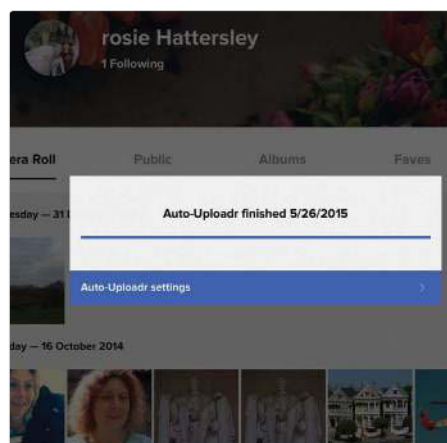
iCloud's great, but Flickr's 1TB of online storage make for the perfect repository for your digital photos, especially as you can upload large original image sizes as they were captured on a DSLR.

HOW TO | STORE YOUR PHOTO ARCHIVE ON FLICKR



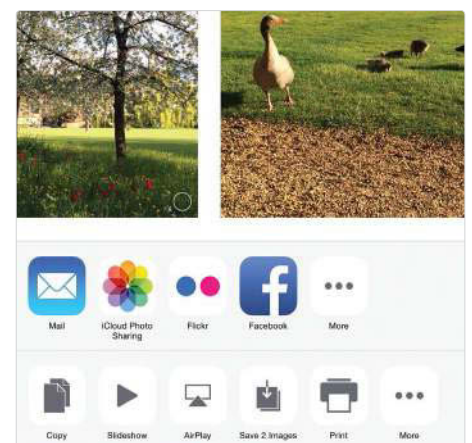
1 Set sharing preferences

Go to [Flickr.com](https://www.flickr.com) and choose a username and password (you may need to create a free Yahoo! email account). Next, install the Flickr app from the App Store and add your account details when prompted. Add a profile photo then go to Settings > 'Privacy and safety' to set your privacy preferences. Turn on Photo Stream if you want photos from your iPhone to appear on your iPad and in your Flickr account.



2 Auto uploading photos

Open the Flickr app on your iPad and you should see a message that all your photos have been synced using Auto-Uploadr. Auto-Uploadr can only work on a Wi-Fi connection. If you've got an iPad with 3G or 4G and take lots of photos, it's best to switch off Use 3G. Your Camera Roll shows the most recent thumbnails and you can mark them as Faves or Public – the latter allows other Flickr users to see them.



3 Adding more photos

A hefty iPad photo collection can take an hour to upload to Flickr. If deleting photos from your iPad, make sure you've got a copy. If you're sharing photos using Photo Stream, images deleted from your iPad won't show up on your iPhone unless they were taken with it. If you don't want to add your whole collection, open the Photos app on your iPad, tap Share then tap the Flickr icon to upload an image.

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Automate tasks with Editorial

Master this hugely powerful text editor and automation tool for iPad

SKILL LEVEL

Could be tricky

IT WILL TAKE

1 hour

YOU'LL NEED

iPad, Editorial,
a Dropbox account
(for our example
workflow)



At its simplest, Editorial is a text editor that supports Markdown, the plain text formatting syntax that's gained in popularity in recent years and is supported by WordPress, among others.

However, there's much more to it than that. Editorial enables you to automate repetitive tasks by creating reusable workflows. There are three ways you can add workflows in Editorial: by scripting them from scratch in Python; by putting Actions together in sequence, a bit like

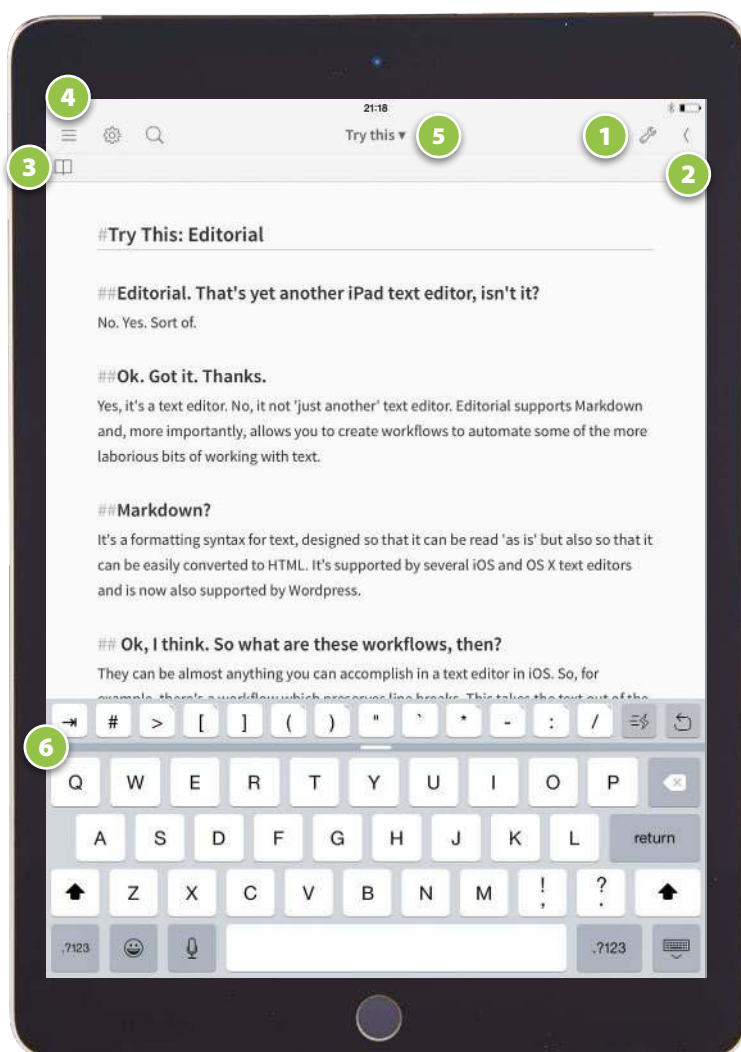
Automator; or by importing workflows created by others.

Most of us lack the skills to take the first option, but the latter two are reasonably straightforward. Having been around for a couple of years, Editorial has a core of devotees who produce workflows and make them available for use, so you may not need to create your own at all.

As well as text, workflows can process images. The one we'll build quickly adds an image from your Dropbox folder to an Editorial document. **Kenny Hemphill**

Editorial allows you to automate repetitive tasks by creating reusable workflows

VISUAL GUIDE | EDITORIAL'S MAIN SCREEN



Behind these icons lie some very powerful tools indeed – here's what they do

Editing workflows

1 Tap the spanner to see a list of available workflows. From here, you can import more of them or create your own. You can also remove workflows you don't need. You can change a workflow's name and icon, tag it and share it.

Switch documents

4 This is where you open a document, either stored locally or in Dropbox. You also create new Markdown or text documents from here. Documents can be sorted by name or date, and organised in folders.

Extended views

2 This arrow accesses a screen where you can preview the current document, view Editorial's comprehensive documentation, access the Console and Scratchpad, and visit web pages in Editorial's built-in browser. The Scratchpad enables experimentation with Python to create workflows.

Document details

5 Tap on the title of a document to see details of its word and character counts. You'll also see an outline of the document, generated from Markdown headings. Tap the pencil icon that appears to the right of the title to edit it, or the Dropbox icon (if it's a local file) to copy it to your Dropbox account.

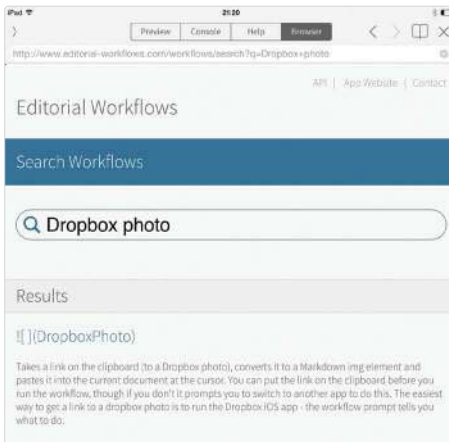
Bookmarks bar

3 If you have a few workflows you use regularly, you can bookmark them. They will be displayed in this bar, making them easy to access. Workflows are added from their information page, accessed from the spanner button. It's worth taking time to give them a descriptive name and icon.

Editorial's keyboard

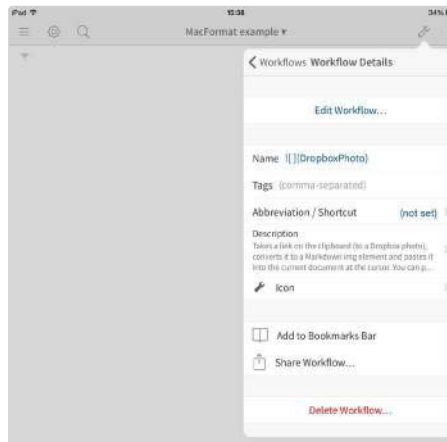
6 The app's keyboard provides a number of useful shortcuts. At the far right of the top row is an undo button. Tap the Snippets key to its left and you'll be presented with a list of text snippets to quickly insert into a document, including one which adds today's date at the cursor when you type 'ddd'.

HOW TO | USE ACTIONS AND WORKFLOWS



1 Download a workflow

To create a new Markdown document, tap the top-left icon to open the sidebar, then the button at the bottom-left. Next, tap the arrow at the top-right of the screen, tap Browser and visit editorial-workflows.com. Type 'Dropbox photo' in the site's search bar, tap the title of the item under Results and then Install Workflow. Confirm on the page that you want to proceed, and again in the dialog that pops up. To check it was a success, return to your document, tap the spanner icon and check the workflow is listed.



2 Use it to insert an image

Tap the 'i' next to the workflow in the list. Tap in the name field to give it a better name, then tap 'Add to Bookmarks Bar' so it's quicker to access. Go to the Dropbox app, find the photo you want, tap its Share button, then Copy Link. Return to Editorial and tap the workflow in the Bookmarks Bar. It should add Markdown code for the image. If you get an error telling you the link lacks an image extension, open another text app, paste the link, remove '?dl=0' from its end, copy it again and try again in Editorial.



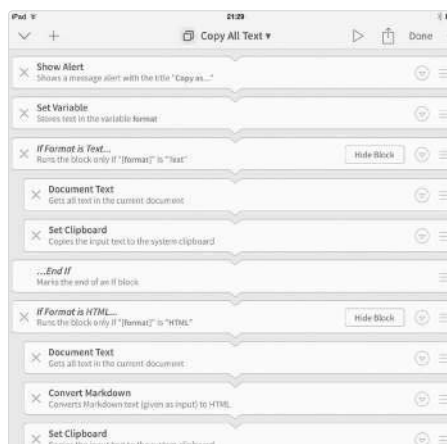
3 Understand workflows

Workflows in Editorial are usually made up of sequential actions (though a workflow can also be single action comprised of a Python script). Actions can do many things, such as converting Markdown to HTML, or searching for text. They have parameters that you set when creating a workflow, the types of which depend on the action. Each action takes the output from the preceding action as its input. Once you've set the parameters for an action, you can save its configuration as a preset to use again.



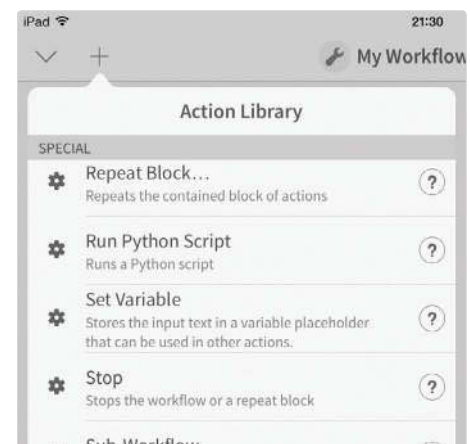
4 Variables and blocks

Variables can be used to substitute values into actions' text parameters. Built-in variables include selected text, file name, and date and time formats. So, to create a letter template with 'Date:' followed by today's date, you'd create an action to insert variables that format the date how you want it to look. When you want actions to run only when a condition is met, add the Conditional Block action and put them inside it. To repeat actions for every line of text that's input, use the Repeat Block action.



5 Edit existing workflows

The best way to understand how actions form workflows is to examine one included with the app. Tap the spanner icon, then the 'i' next to a workflow, then Edit Workflow to see its actions listed sequentially. Tap an action to see its options. To save your choices as a preset, and to rename the step, tap the down arrow at the right of the action's title bar. You can also drag an action to a different place in the sequence using the grip icon at its far right, though you don't want to do that in a pre-built workflow.



6 Create your own

The first step in creating a workflow from scratch is to plan what you want it to do: steps to get there, conditions to meet, variables needed, and so on. Next, check out the Action Library by tapping the spanner, then '+' to create a workflow, then '+' again. Read an action's documentation by tapping its adjacent '?' and work out the order of actions based on their input and what they produce. Store things you need later in variables. Detailed documentation about Editorial is at <http://bit.ly/mfEditorialDocs>.

Apple

TALK

Have your say on
everything Mac,
OS X and iOS



STAR LETTER



In the future, drone pilots
will have to adhere to
much stricter safety rules.



Welcome...

There's always plenty to say about Apple, whether it's good or bad. And we'd particularly love to hear what you think! Write to us at letters@macformat.com and remember, the Star Letter wins a prize!

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- Keep up to date by following us on Twitter at @MacFormat
- Are you on App.net? So are we! We're @MacFormat there too
- Subscribe to our videos at youtube.com/MacFormatUK

Flight risk

With reference to your article on the Bebop Drone, it describes the thrill of flying the copter out of direct visual sight. The rules strictly prohibit out-of-sight use for the very specific reason that the VHF control systems are purely 'line-of-sight', beyond which a drone risks being out of control. The re-land button described will also not work once the drone is out of sight/range.

As a professional pilot, I am both interested in these flying machines and, in equal measure, horrified at the thought of them flying around out of control and heading my way. Even an 800g machine represents a threat to other aircraft, and if ingested into the hot section of a jet engine will likely cause terminal damage followed by failure, fire, or both. These machines are being sold in their thousands, without

training, and in the wrong hands present a clear threat to life. I think the article inadvertently risks encouraging potentially dangerous and illegal use. The Civil Aviation Authority rules (<http://bit.ly/mfaviation>) are simple and clear: line of sight only, 400-foot maximum height, outside a three-mile radius of aerodrome traffic zones, and away from persons, vessels, vehicles or structures.

Peter Bruce



Christian Hall says... You make an interesting point, Bruce, and it is worth highlighting the dangers. We tried to minimise this danger by flying over fields in good conditions, at a height of about 12 metres max. As the 'return to home' button relies on GPS it works out of sight, just not out of range – around 300m with the Bebop. Drone flying, if you'll excuse the pun, is really taking off, so the European Aviation Safety Agency is developing EU-wide safety standards, which it says will be as high as those for manned aircraft. Given the popularity of drone video footage though, the authorities will have a battle on their hands to stop the YouTube generation from flying drones where they shouldn't!



YOU'RE A WINNER!

Drop us an email at letters@macformat.com. If yours gets picked as the MacFormat Star Letter, you win a Native Union JUMP Cable, a charger and battery combo for your iPhone.

Fuel savers

I have been tracking my various cars' fuel economy for 15 plus years now, using Excel. About six months ago I decided to go Mac and now have an iMac. I need as much help as I can get so I am a subscriber to your magazine. I have two points to make about your article.

Firstly, I keep a notebook in the car for logging fuel purchases and mileage at the time of purchase, and I always fill up to the maximum when to pump clicks. If I have to fill up in an 'emergency', I just put in, say, a nice amount such as 10 litres, which doesn't go onto the spreadsheet – it gets added to the next full fill-up.

Secondly, in the spreadsheet I 'smooth' the miles-per-gallon figures using a 'Running Mean Smooth'. One can choose the number of consecutive values to use their mean; I use four. So, the 'current' value on the chart is the mean of the last four figures. It makes trends easier to spot. I plot both raw and smoothed MPG values.

Henry Chandler



Alex Blake says...

There are a few different ways to calculate your car's fuel consumption, as you have rightly pointed out. The way in which you work it out depends on how stringent you want to be; whether you want to watch the pennies with an exact figure or get a more general idea of how much of a gas-guzzler your vehicle is. We just tried to keep it fairly straightforward this time!

Tim(ing) Machine

After about five years of deliberation I've made the switch from a Windows laptop to the new MacBook. My first thoughts are that it's exceeded my expectations by miles! I love the way the OS looks and it's great to use, and the switch was far more seamless than I could have hoped.

On to my actual point. The article in issue 288 about backups was very informative and solid advice; as an IT worker, I fully appreciate the



Our tutorial for calculating your car's running cost used a basic approach, but it can be adapted to your needs.

importance of regular backups. I've set up Time Machine to use my NAS drive, but that's quickly filling up. Is it possible to configure Time Machine more than just on or off? Ideally I'd like to have it do a 'delta' backup a few times a day and then a full-drive backup once a week. If this isn't possible with Time Machine, could you recommend a tool or utility to do this for me? I don't mind paying for a good tool that meets my needs!

Mike Witts



Alan Stonebridge says

Time Machine performs a full backup the first time it runs (excluding anything you explicitly tell it not to include). From then on, OS X tracks which files change and backs up incrementally on an hourly basis. Time Machine uses 'hard links' to maintain multiple references to data that remains unchanged over time. This enables it to keep a complete record of your Mac's storage for each point in time that it makes a backup without unnecessary duplication of unchanged files.

With a little time spent configuring it, Carbon Copy Cloner (bombich.com) can be scheduled to perform backups to multiple destinations and at whatever

Time Machine alternatives such as Carbon Copy Cloner are also able to back up to a schedule, and not just hourly.

intervals you choose, such as every four hours, not just hourly.

Troublesome tables

I have gone through all my back issues to find some basic help with Pages and the internet is no help. Just how do you force a long table to split between pages when using this app?

I teach Spanish and use basic tables to lay out various dialogues, but I can't find a way force a page break halfway through a long table. You have shown us how to handle images and so on, but something as basic as this seems to be lacking. Apple, whilst intuitive and very good, seems sometimes to miss the boat a bit. I never had this problem with Windows and I really do not want to go back to Microsoft. Can you help?

David Simpson



Seth Singh says

This capability appears to be present in the latest version of Pages (5.5.3). When a row becomes too tall to fit onto a page, the app will move that row to the next page, potentially leaving you with a large gap at the bottom of the one from which it was bumped down. (One way to prevent that is to manually split the long contents of a cell into two rows, though the success of that will depend any automatic formatting you've set for the table.)

If you find that a table doesn't behave this way, and becomes cropped at the end of a page, select the table and then open the Format inspector. Click Arrange and set



PhotoSTREAM

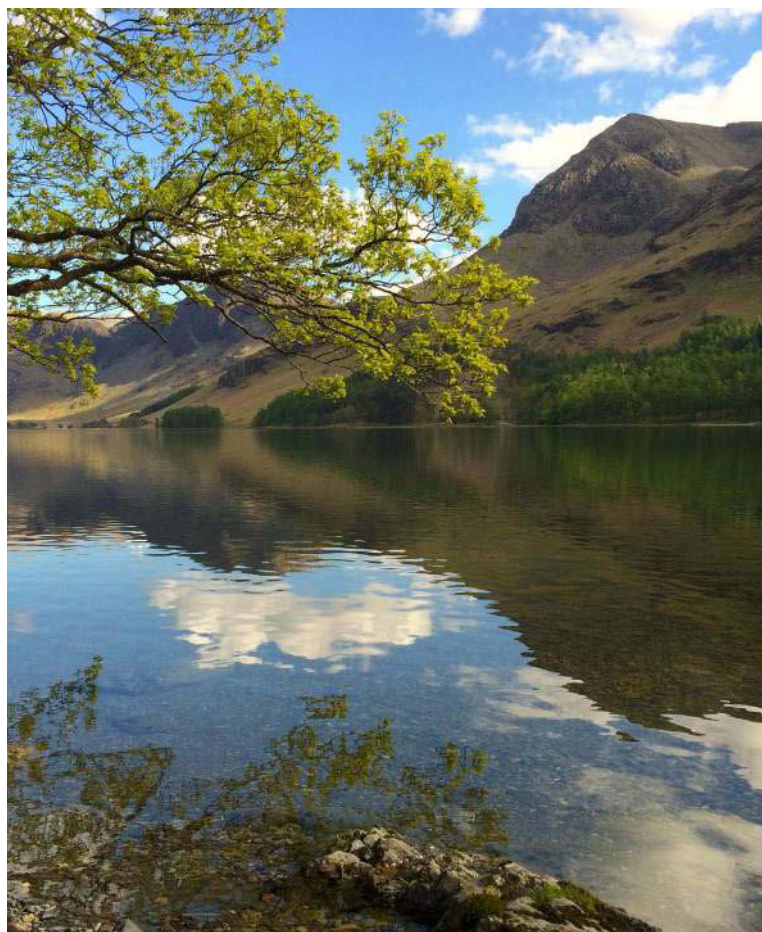
Send the best of your iPhone shots to photos@macformat.com



High in Holland Peter Maaskant took this sunny panorama on his iPhone 6, and as a photographic traditionalist it's a no filter one too!



Shades of Grey Driving from Dublin to Galway, Janet Grainger shot this on her 6 Plus and edited in Photos and Perfect Effects (£14.99).



Peak perfection "I can't see much difference in this iPhone 5s shot and my Canon EOS 5D," says Simon Whaley. High praise indeed for his iPhone and Preview, which he edited in.

Object Placement to Move with Text, and choose Inline with Text for the Text Wrap option. Your table should now automatically split over as many pages as it needs to.

Failed install?

Like your Star Letter correspondent Kenneth Watkins (*MF287*), I had deferred upgrading and was using OS X Lion on a mid-2011 27-inch iMac, purchased earlier this year. Time Capsule started to misbehave, culminating in it starting all over again in March, with all previous backups no longer being accessible. It then insisted on spending interminable hours indexing, while at the end of March the backups from early March became inaccessible. The loss of the earlier backups was no big deal, as I also save about once a month on a separate external hard disk, but the ongoing indexing was a pain.

I recently upgraded my broadband, so I decided to download Yosemite and all went well – almost. The download took about 20 minutes and then the installation started, but stuck short of completion. I left it that way for 12 hours while I explored the options. The general consensus seemed to be that if the process did not resume, the best thing to do was force a shutdown and, in most cases, you would (probably) be okay and all would be well on restart. But my concern was that in my enthusiasm to upgrade, I had omitted doing a full backup on the external disk, so if there was a catastrophe, and especially if Time Capsule was mucked up, I could be in trouble.

So with great trepidation, I forced the shutdown on the following morning, started again, and waited very, very anxiously. My Mac started, gradually sorted itself out, and opened successfully in Yosemite. I checked around, and everything seemed in order, all my stuff was still there and up to date and, wonder of wonders, the Time Capsule backups from early March had reappeared.

I've had no major issues with Yosemite or with most of the upgraded apps. There are some minor issues with Photos, substituting for iPhoto, but I have retrieved an older Pictures Library and reckon going through the process of migrating that library to Photos all over again may resolve the problems.

So I would say to Kenneth Watkins, go ahead and upgrade if your machine can accept the upgrade. I had always been slow to move forward, even back in the old pre-OS X days, but apart from when a very old machine means that you have reached the upgrade limit, I will never again lag behind as I did over the last few years.

Michael J. Walsh



Alan Stonebridge says...

We've had many letters warning of upgrade issues but we think the number of them with Yosemite have been very few on the whole. We understand the frustration with upgrading to newer versions of OS X but Apple, on the whole, handles this well. It can be disconcerting when an install seems to have frozen and you have to use a brute-force measure, but we're glad it worked for you. It's not recommended practice though; the installer might seem to have failed but it simply may not be finished.

Remember that OS X's Recovery mode, paired with a full backup of your system made using Time Machine, can be used later if you're concerned about something that may have been lost during an update. This even enables you to roll back the system to an earlier major version of OS X.

Private problem

My home workstation is a mid-2011 iMac (3.4GHz Intel Core i7 with 24GB of RAM). I often work abroad and use my iPad on an untrusted (public) network, I use a commercial VPN for security, but I'd prefer to host my own VPN and rely on my iMac to relay web pages to me via it. I know OS X Server 4.1, contains a VPN module. Could I surf the net through it, and would I still be able to use the iMac as a personal workstation?

Mark Deacon



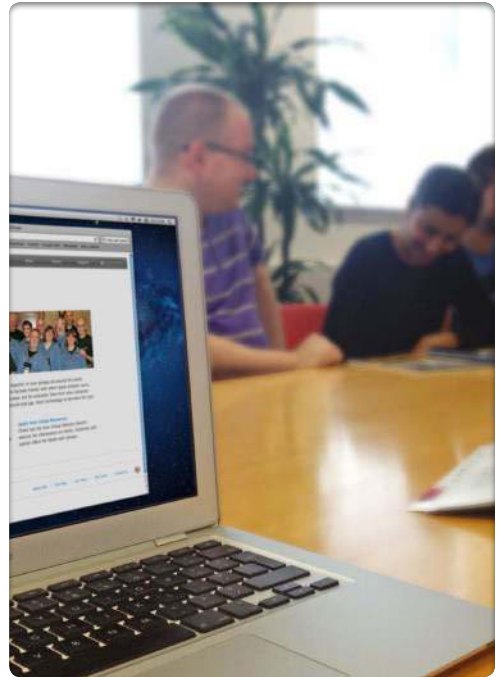
Christian Hall says...

After installing OS X Server on a Mac, you can continue to run apps as normal. Server is simply used to set up and manage additional services that run in the background, such as the VPN. These take up additional resources, such as CPU cycles, memory and network bandwidth; the Server app includes graphical tools, similar to the one at the bottom of OS X's Activity Monitor app, that inform you about short- and long-term resource use. However, your iMac's specifications are easily sufficient to do something as relatively undemanding as routing web traffic to one iPad.



User Groups

Find fellow Mac enthusiasts near you!



Search the list below to find your local Mac user group – and if you can't find one, why not start one yourself? It's easy and fun.

Berkshire MUG
vlsburia@me.com

Bracknell Forest MUG,
Bracknell, Berks
bfmugoffice@gmail.com
bfmug.org

Bristol and Bath MUG
robert@bbmug.co.uk
bbmug.co.uk

ClubMac Ireland, Dublin
secretary@clubmac.ie
clubmac.ie

Cork University College, Cork
d.murphy@cs.ucc.ie
ucc.ie/mug

Cotswold MUG
paul@cotsmug.org
cotsmug.org

Cumbria Mac Enthusiasts,
Barrow-in-Furness
contact@macenthusiasts.co.uk
macenthusiasts.co.uk

Edinburgh MUG, Edinburgh
Twitter: @edmug
edmug.org.uk

Exeter MUG, Exeter
examug@mac.com
examug.org.uk, Twitter: @examug

London MUG, London
secretary@lmug.org
lmug.org.uk, @londonmacgroup
Facebook: facebook.com/
groups/35108081221

Midlands MUG,
Birmingham
mmug.org.uk

OxMUG, Oxford
oxmug.org

South Essex MUG, Wickford, Essex
seal-apple.co.uk

South Wales MUG
terence.neels@btinternet.com

Suffolk Mac User Group,
Ipswich
mikekwasniak@me.com
suffolkmacusergroup.co.uk

Sussex MUG
adamfield@gmail.com
sussexmug.org

Three Counties MUG Luton,
Bedfordshire
chris@3cmug.org.uk
3cmug.co.uk

Wessex MUGs Fareham,
Dorchester, Bournemouth
& Salisbury
wamug.org.uk

COMPETITION

WIN!

ONE OF THREE FITBUG ORB AND KIQPLAN FITNESS BUNDLES

W

e've teamed up with wearable technology company Fitbug and fitness program Kiqplan to give you the chance to win a bundle, which includes a Fitbug Orb and a host of fitness plans. The prize is worth £209.87 and we have three to give away.

The Fitbug Orb is the ideal way to kickstart a healthier lifestyle. The button-sized activity tracker counts every step, as well as calories and sleep. Wear it on your wrist, belt or beneath your clothing and let it wirelessly sync data to your smartphone app.

The bundle also comes with all Kiqplan's fitness plans, including Beer Belly Blaster, Slim & Trim, Your First 5k and 10k Run Ready. Enter the competition now to be in with a chance of winning this fantastic prize!

TO ENTER, SIMPLY VISIT
<http://bit.ly/FitbugKiqplan>
AND ANSWER THE
FOLLOWING QUESTION:

Which of these is included in the Kiqplan range of fitness plans?

- A/** Beer Belly Master
- B/** Beer Belly Blaster
- C/** Deer Welly Blaster
- D/** Delhi Belly Blaster

WORTH
£210
EACH



**COMPETITION
CLOSES: 13/08/2015**

By taking part in this competition you agree to be bound by the Competition Rules: www.futureplc.com/competition-rules. Entries must be received by midnight on 13 August 2015 (UK time). Open to UK residents aged 18 and over. There will be one winner of all three prizes. The prize is non-transferable and non-refundable. There is no cash alternative.

GET IN TOUCH

If you have a technical issue that you need help with, please email us at: sos@macformat.com

MacSOS

Your questions answered by our Apple expert in residence, Luis Villazon



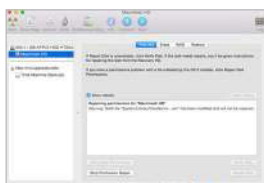
Is this error important?

Q Should I be worried about the warning message that appeared when I used Disc Utility following an unexpected quit by Mail? It says 'SUID file - System/Library/ Core Services/ Remote Management/ ARDAgent.app/ Contents/ MacOS/ ARDAgent has been modified and will not be repaired'. I'm using a mid-2010 Macbook Pro with Mavericks. Disk Utility reports everything else as OK, verifying and repairing some permissions. I have tried to find the file in Library with no success.

Andrew Knight

A Don't worry this is perfectly normal. Disk Utility checks the permissions for the OS X system files against a master list that details the 'correct' permissions for each one. In 10.5, some of these files were shuffled around into different subfolders and this changed their effective permissions very slightly. Disk Utility wasn't updated to account for this and so it throws up these erroneous warnings. Although this plays hell with the obsessive-compulsive part of my brain and sets off the tic in the corner of my eye, Apple has confirmed that this message is not a concern and should be ignored. See <https://support.apple.com/en-gb/HT203172> for a complete list of other Disk Utility warnings you can ignore.

Even if Repair Permissions shows warnings there isn't necessarily anything wrong.



Wi-Fi interference near your Time Capsule can make your backups much slower than they need to be.



Slow Time Capsule backups

Q Both 'Preparing backup...' and actually backing up take several hours with modest amounts of data. Apple sites have many similar complaints but no solutions. Can you help?

Patrick Crampton

A There are lots of things that can cause this, but let's go over some of the common ones. First check you don't have anti-virus software running during the backup period. Also open the Spotlight search box. If you see the 'indexing' progress bar appear, halt your Time Machine backup until it has finished. Time Machine is a *lot* slower while Spotlight is indexing. If Time Machine recently failed to complete a backup, the next one can be much slower

because it needs to roll Time Machine back correctly, using the .InProgress file from the failed backup. And adding folders that were previously excluded from Time Machine can also add a lot of time to the backup.

You're using a Time Capsule, so we need to take network issues into account as well. Connecting both the capsule and your Mac to your router via Ethernet will speed things up, but if that's not practical try just putting the Time Capsule in the same room as the router. If this makes a dramatic difference, you may have Wi-Fi interference. If none of this helps, try installing the Time Machine Buddy from www.bluedog.com.au/default/Time_Machine_Buddy.html. This Dashboard widget provides a handy way to view the Time Machine log messages that might give you some more clues.

Hanging on to iPhoto

Q I intend to upgrade my iMac to a newer Retina screen model. I currently still use the iPhoto app rather than the new Photos app and will want to do so on the new iMac, at least for the time being. Is there a way I can copy or transfer my current iPhoto app to the new iMac? I know that I could use Migration Assistant to transfer all my files and apps to the new iMac, but would rather not use that option.

Barry Cardy

A That won't work anyway. Migration Assistant won't copy over the iPhoto app, just the iPhoto library, which will then get imported to Photos the first time you start the app. You should still be able to copy the iPhoto app over, if you have a Time Machine backup, or by putting the old iMac in target disk mode. Although iPhoto has been replaced, it should continue to work for the duration of Yosemite's life at least.



The new Photos app improves on iPhoto but you can keep using the old app for now if you like.

iCloud wants to duplicate 300GB of photos!

Q When the new Photos app arrived, I was happy to move from Aperture because I wanted to make use of the options to store all my photos in iCloud – both to have an off-site backup, and also to have access to all my pictures across all my iOS devices. It took around a week to upload all 300GB of photos and videos, but the convenience and security were worth it.

I had an annoying problem with the HDD and decided to clone and erase the disk then copy across the files and folders back onto it. I named it the same as before, and dragged the files and media back. The Photos library opened just fine, but now the app thought it was a brand new set of photos and offered to upload them all to iCloud – again.

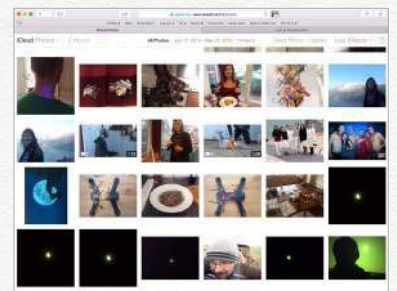
In the end, I had to delete the library on my HDD, open Photos with no library selected, and then download the photos from iCloud within the app – all for a set of photos I already had a copy of!

Tim van Someren

A I haven't been able to absolutely confirm this, but it looks like Photos might be saving the full path to each image when it uploads them to iCloud, including the UUID label of the disk volume. This could be necessary to allow you to back up the photo libraries

from multiple Macs to the same iCloud account. The libraries on two Macs would have the same path name by default, but the UUID would differ so the backups wouldn't overwrite. But erasing your disk and reformatting it means it gets assigned a new UUID, so iCloud treats the restored files as new copies in a different location.

Cloning the drive back again, instead of just dragging the folders across, would restore the original UUID but might conceivably mean you'd recreate whatever problem you had. The SuperDuper! backup utility (www.shirt-pocket.com) has a secret command-line tool that will let you force the UUID of a volume to whatever you like, so you could use this to restore the UUID to the previous value. But this is pretty technical and only works if you have made a note of the previous UUID name of the volume. I think cloning the drive back is the only practical way to avoid iCloud uploading everything again.



iCloud can end up duplicating your photos if you erase your library and copy everything back.

Backing up didn't save my photos

Q I have just been on a four-month cruise, taking images at every port. I downloaded these onto my MacBook giving each port a number and name. As a precaution I dragged each file (copying them) onto three different flash drives. I now find that about nine are missing completely. Not on the laptop hard drive nor on the flash drives. I am

frantic! I have pictures of Komodo dragons somewhere!
Bernard Minns

A In broad brush strokes, the three possibilities are that
1. The images were never copied to the flash drives in the first place.
2. They were copied but deleted.
3. They have become corrupted and are no longer recognised as image files.

Scenario 1 is probably terminal

because your camera's memory card has probably been overwritten several times, so there's no data left from your images, but there is a small chance that scenarios 2 and 3 may still allow some image data to be recovered with a commercial recovery tool such as Data Rescue 4. This will scan your flash drives and can find files that have been deleted or corrupted, even after the drive has been reformatted. It costs about £64, but you can run the free demo

(<http://bit.ly/1BiVZga>) to see if there are any recoverable files first.



Data Rescue can find lost photos, if your memory cards haven't been overwritten.

Aperture 3.6 and Photos

Q I have imported my Aperture library (96GB) into Photos and the iCloud Photo Library. I would prefer to continue with Aperture rather than moving over to Lightroom, and the major problem is in transferring any new images imported into Aperture, and then edited, across to Photos. As a workaround I have tried exporting images to the desktop and then importing them into Photos, but labels and ratings do not end up as keywords. I then tried Photo Stream, but again no labels and ratings were attached to the images in Photos.

Neville Morgan



Photos has streamlined the way that images are rated and tagged, but it won't suit everyone.

doesn't include all of the metadata in the exported file and labels are one of the casualties. This means that a workflow that moves images back and forth between Aperture and Photos is very awkward.

If anyone can think of a convenient way to do this and preserve all the metadata in each direction, I'd be very interested to hear it. For now, I think your practical choices boil down to 'Photos only' or 'Aperture only'.

A Photos doesn't have separate numeric ratings; it's all just keywords. When you import the whole library, the ratings and labels are converted to keywords and Photos stores these with the image. But when you export individual images to a folder, Aperture

Increasing the refresh rate of my monitor

Q I have a Mac mini connected to an LG monitor. This display is very crisp and clear but I have noticed that I can occasionally detect a slight flickering. The refresh rate is 60Hz, which I think may be the problem. Unfortunately I cannot select the 75Hz option because it won't let me. If I change from 'Best for Display' to 'Scaled', some of the resolutions will let me use 75Hz, but they all distort the screen. Can this be fixed?

Brian Glynne

A Probably not with your current monitor. The maximum refresh rate is a function of how quickly the monitor can update every pixel on the screen. The higher the resolution, the more pixels have to be refreshed and, beyond a certain point, the monitor must drop from 75 times a second (75Hz) to the next step down, which is 60Hz. For the LG E2242T, for example, the highest resolution that

supports 75Hz is 1,280x1,024. This uses a 5:4 aspect ratio, so it will look stretched when it is interpolated to fill a screen that is designed for 1,920x1,080 (16:9 aspect ratio). You can use the monitor's on-screen menu to change from widescreen to 'original', which will get rid of the distortion, but you'll get black bars at the sides instead. Or you could use 1,280x720 resolution, if your monitor supports it.



Hold down **⇧** when you click Scaled in Display Preferences to see additional screen resolutions.

Tech Talk

by Luis Villazon



➤ Since Apple replaced iPhoto with Photos, the forums have been full of wailing and lamentation. This is what forums are for of course; no one bothers to let the internet know when everything is great. But Photos has changed the way your snaps are sorted and categorised and no one likes change. One change in particular, has alarmed many people. Photos no longer hides 'hidden' photos from the All Photos view. In iPhoto, you could mark a photo with the hidden flag and it wouldn't show up in any of the albums or events views. This was a handy way to discretely tuck any cheeky bedroom

Photos changed the way snaps are sorted, and no one likes change

shots out of view. It was never going to resist the forensic glare of the vice squad, and it wasn't meant to. But I know several couples that used this feature to tune the family photo album, so that the lace and elastic didn't normally show up with the holiday snaps. In Photos, 'hidden' pictures are only actually hidden from Moments, Collections and Years. They still show up in 'All Photos' and are explicitly added to a new smart album called 'Hidden'. Hardly discrete.

You can still keep your boudoir shots off the desktop in Photos, but you need to create a separate library for them. Hold down **⇧** when you start Photos and click Create New. You need to remember to close Photos and reopen it using the normal library every time you have finished using the secret one, so that the default library remains the safe one.

Luis Villazon has been keeping data private since the days when pig Latin was considered encryption.

One stick good, two sticks bad

Q I have a problem on my 27-inch iMac that is driving me crazy. Three weeks ago I suddenly had a kernel panic and the iMac crashed. At first I thought it was a software problem, but after rebooting it continued to crash every few minutes regardless of what apps I had open at the time. I have reinstalled Yosemite, but that hasn't made any difference. Then I remembered something you have said in these pages and tried taking out one of the RAM sticks. With just one installed the system runs fine (although slower, obviously). And it doesn't matter which one I use – either one on its own is fine. Both together cause kernel

panics inside of ten minutes from booting up. How is this possible?

Mark Hardwick

A There are really only two possibilities: either there is some strange conflict that causes this particular combination of RAM modules to fail when both are installed, or there is a fault on the motherboard. The second option could be something as simple as a faulty contact on one of the RAM sockets. Turn your iMac off, remove the RAM and make sure there is no fluff caught in the sockets. Then check none of the little gold contacts are bent or out of line with the others. You can also try dipping a cotton bud in vodka or gin and using it to swab the

connectors. If that doesn't help, try replacing *both* RAM sticks with a known good pair. 8GB should cost under £50 from www.crucial.com.



Faulty RAM sockets could be a cause of random kernel panics, so check that they're clean and fluff-free.

Screensaver language lessons

Q I recently came across the 'word of the day' screensaver on my Mac and this seems like it would be a great way to brush up on my Spanish. But the Screen Saver Options button only gives me the option of using the New Oxford American dictionary or something that I presume is Japanese. Is there a way of adding extra dictionaries to this?

Sally Mansfield

A Unfortunately not. This screensaver was added for Snow Leopard with just American and Japanese dictionaries and never updated after that. I don't think it's even officially supported from Lion upwards. There are Spanish flashcard language tools on the App store that work in a similar way, but you'd need to open the app manually each time.

The word of the day is great for brushing up on your Japanese, but doesn't work for any other languages.



I have plenty of disk space!

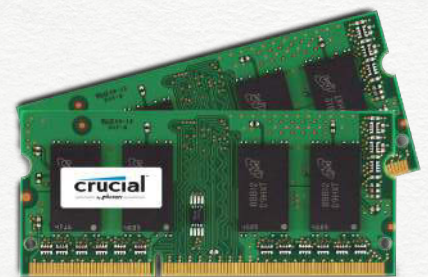
Q When processing raw files in Photoshop, it brings up the message 'Your Mac startup disc has no space for application memory' and I have to force-quit. I don't have anything else running at the same time and I have an iMac with 16GB RAM, a 256GB SSD that shows 100GB free, plus a 2TB HD. I have nothing in the trash and don't understand why this is happening.

Kev Rayner

A OS X uses the startup disk to hold data from your currently running applications that hasn't been accessed for a while. This is a completely automated process and you can't turn it off. The OS constantly swaps portions of data in and out of the disk in order to keep the things you are most likely to want in physical RAM, since this is much faster.

Unlike most other UNIX-based operating systems, OS X only uses the startup disk for this and will allow this virtual memory to grow as much as needed, to the physical limit of the drive. When OS X can't expand the amount of data in virtual memory, it concludes that the drive must be full and throws up the warning message.

In your case we know the drive definitely isn't full, so something else must be causing



Bizarrely, faulty RAM can sometimes look like a problem with your hard disk.

it to fail. Faulty disk permissions can sometimes do this, and it's an easy fix, so repair permissions on the startup disk from Disk Utility. If this doesn't help, you may have a fault in your physical RAM. I have seen cases where a single faulty bit on one of the RAM modules causes a virtual memory swap to fail, erroneously triggering this message. Order a replacement RAM module from www.crucial.com and swap each of the RAM sticks in your iMac in turn until the problem goes away.

Finally, it's also worth checking your Photoshop plug-ins. A bug in one of these can cause the amount of memory Photoshop uses to steadily grow during your session, and this can make transient memory errors like this more likely. Try disabling your plug-ins one at a time in Photoshop.

Keeping events special

Q What has happened to iPhoto? I used to have all my pictures organised using named events and this worked very well, particularly given that it was easy to merge multiple events together, if they spanned several days (holidays, for example). Now in Photos all my pictures appear in one long list, with no way of naming the occasion. Where are my events?

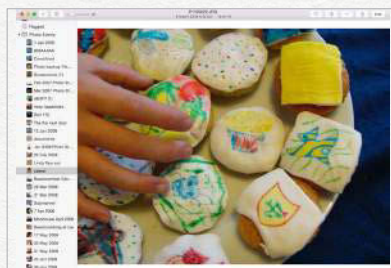
Anne Channing

A They are gone. Apple decided that there was too much overlap between events and albums, and since they couldn't very well have a photo app without albums, it was events that had to go.

You're making this sound worse than it is though. The 'All Photos' album is just a giant scrolling list of every picture, sorted by date, true. But the Photos view (at the top of the sidebar) will break this up with date headers, so that all the pictures taken on the same day are grouped together. If they

were taken on a camera that records the location, this will also be shown in the header. For holidays that's probably all you need, but if you want to group your images more precisely, you can just drag them into a new album and name it as you would have previously named the event.

You can also use keywords and smart albums to create albums that automatically update as you add new pictures. And on top of all that, when you migrate from iPhoto, the Photos app creates a separate album for each of the events you had previously, listed under 'iPhoto Events'.



Don't worry, your old iPhoto events are preserved when you migrate to Photos.

Self Service

Find the answer

Yosemite has refined the way we find the answers to all sorts of questions, including some clever shortcuts that you probably hadn't noticed.

1 Yosemite includes a Spanish to English dictionary. Open Preferences in the Dictionary app and tick the box next to 'Gran Diccionario Oxford – Español-Inglés'. You can now translate any Spanish word in most OS X apps by right-clicking it and choosing 'Look Up'.

2 If you need to do a quick sum, you can hit **⌘+Space** to bring up Spotlight and type it there. Or click the Notification Centre icon in the top-right corner of the screen to slide a basic calculator into view.

3 Spotlight can also search for songs. So if you don't want to wait for iTunes to load, just hit **⌘+Space**, type in the name of the song and play it directly from the Spotlight window.

4 If you want search the internet without being tracked by Google (or anyone else), you can use DuckDuckGo. Safari 8 allows you to switch search engine directly. Click the magnifying glass icon in the address bar and select DuckDuckGo.

5 By default, Safari 8 will only show you the site you are browsing, rather than the URL of the specific page. If you want to revert to the old way, click 'Show full website address' in Safari > Preferences > Advanced.



Play individual songs straight from the Spotlight search window, without starting iTunes.

Defragging is unnecessary

Q I have a Mac Pro that is a few years old now and still mostly going strong but I feel like it's starting to show its age now and I wonder if a defragging utility like Drive Genius 4 might help restore some of its original speed. I mostly use my Mac for music production and I have two 500GB drives. The startup disk is quite full now but there is still plenty of space on the other one for now.

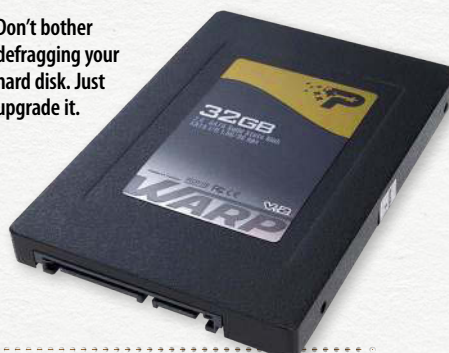
Gary Bicknell

A Disk fragmentation happens when files get split into several chunks to tuck them into the little pockets of free space left behind when other, smaller files were deleted. As your drive fills up, the available free space can end up isolated in thousands of little bubbles, so all your files get scattered to the four winds and it takes much longer to read and write them.

That's the theory anyway. In practice, you

can completely ignore disk fragmentation. OS X already uses several strategies to minimise fragmentation occurring in the first place, and will automatically defragment the most commonly used files on the startup disk. It's true that this becomes much less effective on drives that are almost full, but the best way to fix that is to upgrade to a larger disk, not defragment the one you have. A 1TB internal hard disk costs less than £45 and will take ten minutes to install in your Mac Pro. This is cheaper than Drive Genius, and a good deal more effective.

Don't bother defragging your hard disk. Just upgrade it.



GET IN TOUCH

If you have a technical query with your iOS device that you need answering, please email us at sos@macformat.com

iOS SOS

Christian Hall fixes your iPad and iPhone problems



What's up with my password?

Q iTunes does not recognise my Apple ID password in my iPad!

Maritza Arroyo Muñiz

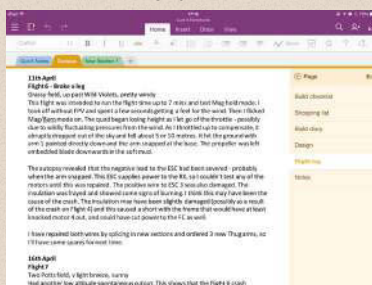
A Does your Apple ID work anywhere else? Try logging in at <https://appleid.apple.com>. If you can log in there, then perhaps the email address used for your login is wrong on the iPad. Check it in Settings > iTunes & App Store. If the email address there matches the one you used when you logged in through the web browser, try signing out on all your mobile devices and then changing the password on your desktop. If this still doesn't work, or you can't even log in through the web browser, it's possible your account has been locked. You'll need to go to www.apple.com/support/appleid and get Apple to reset your Apple ID account.

Tracking OneNote storage

Q I use Microsoft OneNote a lot on my iPad, as I find it better than the built-in Notes app.

However, I'm starting to run low on space and I'm concerned that this might be to do with the data I have in OneNote. Is there a way to see how much each notebook is taking up?

The Manage Storage option in General settings just shows how



Microsoft OneNote works best when you allow it to sync with Microsoft's own version of iCloud.

much all of them are taking up together, which is not what I want.

Mike Spencer

A It's even worse than that because the General settings option includes the space taken up by the app itself as well. You can't see individual file sizes in OneNote, but if you are syncing your notebooks to Microsoft OneDrive (which is the default), you can view them there. First make sure your notebooks are synced to the cloud by tapping the little Filofax icon on the purple ribbon bar at the top. Now download the free OneDrive app from the App Store and log in to your OneDrive account. Each notebook will appear as a separate icon in the Documents section and the Details view shows the size of each one, next to the creation date. The Thumbnail view doesn't show file sizes.

USB disks on an iPad

Q I have a lot of research notes stored on a USB drive and I'd like to be able to access these from my iPad mini. I purchased the Lightning-to-USB camera adaptor, but the iPad says it needs too much power. Is there a way of boosting it?

Daniel Lawson

A External USB hard disks generally require more power than the iPad mini can supply. If you have a

drive that uses two USB ports to boost the amount of power it receives, you could plug one of these into an external battery pack – even a small one ought to be enough to power an external hard disk for well over an hour.

Juggling three devices and two cables might not be terribly convenient, so a more compact alternative would be to use a USB flash drive. The Leef iBRIDGE has both Lightning and USB connectors built in and comes in capacities up to 64GB.

Jettisoning podcasts fast

Q I use the Podcasts app on my iPad mini a lot, in fact it's probably my main use for my iPad. But some times I run low on space while I am out and about and want to dump a lot of podcast episodes, then and there. I can mark them as played but this doesn't immediately free up the space. Is there a way to have this take effect immediately?

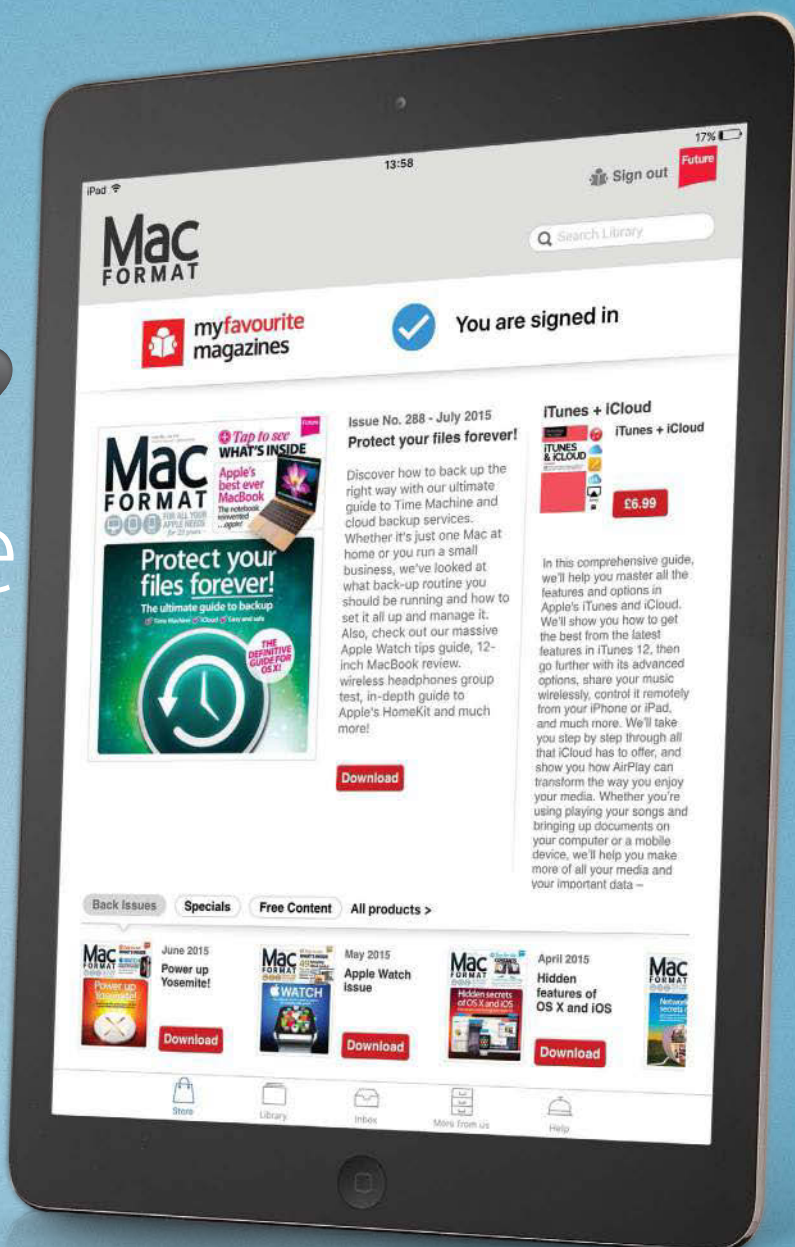
Charlie Westbrooke

A Your iPad can be set to automatically discard played episodes after 24 hours, and you can configure this setting on a per-podcast basis. But you can also delete them immediately if you need the space in a hurry. Tap the podcast in My Podcasts and tap Edit. Tap each episode you want to dump and then tap Delete.

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July 2015

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Get fit with TECH



TEST SUBJECT

Tim is a freelance tech writer and longtime iPhone user, and has a personal interest in the new generation of integrated wearable devices that aim to reliably monitor and improve overall health and fitness. His regular exercise routine includes running, cycling, badminton, CrossFit and strength-training, and he is a regular participant in Bath's annual half-marathon. In the course of these activities he has tested and reviewed a number of wearable motion trackers including the Jawbone UP24, MisFit Flash, Garmin Vivoactive, Fitbit Charge HR and Fitbit Surge. For this feature he tested the Apple Watch over a number of weeks in order to compare his experience with other market-leading wearables and evaluate the pros and cons of the Apple Watch when used solely as a fitness device.



How well does the Jony Ive-designed wristwatch function as a fitness tracker? **Tim Hardwick** puts Apple's timepiece through its paces.

Wearables are already big business in the fitness world. Users talk of the 'quantified self' as the latest advance in

fitness optimisation. That may sound glib, but if you're looking to get fit and stay healthy then performance data is crucial to achieving that goal. So when word got out that Apple was working on a wristwatch with fitness tracking features, my interest naturally piqued. When I heard various models would be available, one called the Apple Watch Sport, I knew I had to check it out.

The spec sheet is impressive: the Watch packs an accelerometer, a gyroscope and optical heart-rate sensors, but no GPS (more on that later). What struck me when I got hold of one though was how light and durable it feels on the wrist. Much has been written about the design's solid water-resistance, but the aluminium case and scratch-resistant glass display really do feel fitness-ready. Twinned with a white 'fluoroelastomer' flexible strap, it's secure yet comfy, and certainly looks like a sleek athletic timepiece. But how would it perform – and more importantly, would it translate to a fitter, healthier me?

Day 1

My first job was to get familiar with Apple's Activity app, which tracks your movement over the day and divides this data into three metrics called Move, Exercise and Stand. I opened the app and expected to have to input my personal information, but instead it automatically imported my stats from the iPhone's Health app. What I did have to enter was my daily activity goal, or how many (active) calories I aimed to burn. I started with a round figure of

1,000, tapped the Start Moving button, and went on with my day.

About ten minutes into my walk to work that morning, I looked at the time, then swiped up to access the Watch's Glances feature. My activity was shown as three concentric rings; the outer red 'Move' ring had progressed about a fifth of the way round to indicate calories burned – a swipe left revealed an exact number: 124.

Ten minutes later I arrived at the office, sat at my desk and checked my wrist again to find almost a third of the circle complete.

Not long after, I felt a subtle ding on my wrist. The Watch display informed me that I'd been sat still for an hour and it was time to get up. I'd received similar subtle warnings from Jawbone's UP24. Many of us are guilty of remaining sedentary for far too long. It slows metabolism,

I arrived, sat at my desk, checked my wrist again to find almost a third of the circle complete

which affects the body's ability to regulate blood sugar, blood pressure and break down body fat. In fact studies have linked excessive sitting with being overweight, type 2 diabetes, and even premature death – regardless of how much exercise you do. I received three more notifications that morning, heeding each one, and noticed that by lunchtime the Activity app's blue Stand circle had filled up by a third. I took a stroll through town during my break and by the time I got back to my desk the red ring had moved ahead again,



There's actually three default ways to track exercise: The Activity app (green circle), the Workout app and through Activity in Glances.

although the green Exercise circle was yet to stir.

My walk back home is uphill and always gets my heart going. I was able to check this with a swipe up on the Watch face into Glances, and received a measurement of 90bpm. I also noticed that, reacting to my increased heart-rate, the green Exercise circle had now progressed by almost a third, so I chose the long route home in an attempt to take it into the final stretch. By the day's end, my activity update showed completed Move and Stand circles, but for Exercise, I came up short. Clearly I had not been intensive enough!

Day 3

Generally, Apple Watch has to be removed and charged every night, so no sleep data is logged – unlike the UP24, Misfit Flash and Fitbit Charge and Surge units. That's a shame, since sleep can be a good indicator of overall health and is especially insightful if you're looking to beat insomnia by being more active (see our review of the Emfit QS on page 87).

I got up early the next day for a run to test the Watch's Workout app. I secured my iPhone 5 in an armband, selected Outdoor Run on the Watch, chose the open 'No Goal' option and took to the streets. Every so often I raised my wrist to see the display showing time elapsed and actual time; swiping left offered live pace, distance, calories and (after a delay) heart-rate data. The Watch display is a thing of beauty, but I found it difficult to read in direct sunlight. I also found swiping awkward when running, especially after working up a sweat. Automatic progress updates every mile were therefore welcome, and allowed me to keep tabs on my session at regular intervals. I returned home at the fifth mile, but neither the Watch nor my iPhone offered any detailed post-run analysis such as splits or route covered – stats the Fitbit apps do well – though I did notice that my workout session had counted toward the Exercise circle in Activity, confirming the tight integration between the two apps. Later that day I

RUNNING

Running is the most instinctive exercise and requires almost nothing but effort and a decent pair of trainers, so it's good to know that the Apple Watch caters to this need pretty well. Selecting the Outdoor running option lets you select a goal – calories burned, distance or time – and sets these against the last recorded goal you achieved, allowing you to aim higher or lower. During a run you receive milestone updates, letting you know if you've hit another mile or that you're halfway to your pre-assigned goal. When you've finished your run, the Watch shows you the distance covered, time elapsed, and the number of calories burned, but this data isn't readily available after you've viewed it – and even

seems to vanish. This data retention falls short of the detailed stats that third-party apps like Runkeeper Pro offer with an iPhone in tow.

Otherwise, running with your iPhone the first few times enables the Apple Watch to calibrate your stride. Apple recommends inputting the time for a whole series of runs to get it acquainted with your running style, but in my experience it was very accurate after just a couple of sessions – even taking into account the elevation based on my heart-rate. Eventually this made taking the iPhone out with me an afterthought, especially after I'd set up a music playlist and paired the Watch with some decent earbuds.



Swipe up from the clock face to access Glances, which includes the heart-rate monitor.

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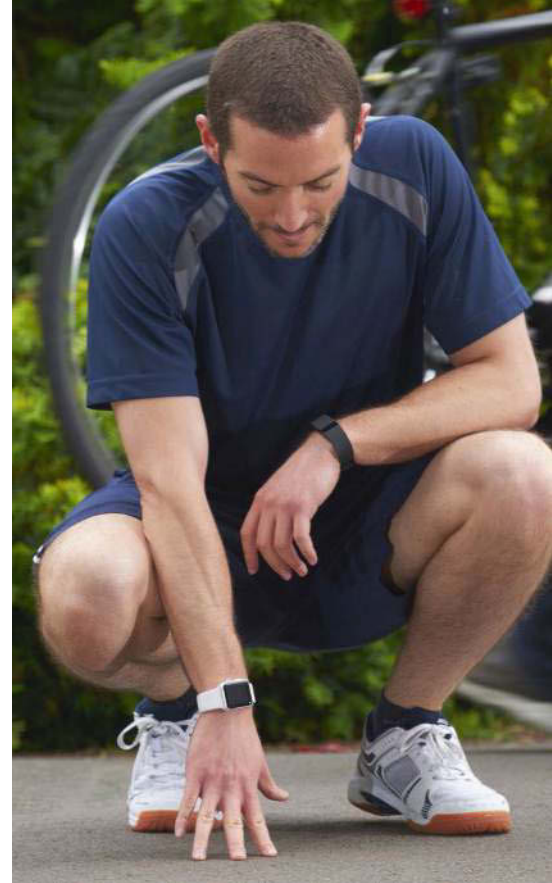


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CYCLING

The Workout app offers a choice of tracking either indoor or outdoor cycling sessions, which makes you assume there's a difference in monitoring rate between the two. However it wasn't immediately clear from my tests. Raising your wrist to look at the Watch when cycling makes the normally short delay before the screen turns on seem all the longer. A mount for the watch would be better (such as the Var CyClip, www.thecyclip.com), but then your iPhone would probably do just as good a job. The Watch battery survived a three-hour morning bike ride with enough battery left over to perform the rest of the day's activities, although the Power Reserve mode (which turns off heart-tracking) may be better – though less accurate – for day-long treks. The Apple Watch isn't compatible with and cannot read data from Garmin-owned ANT+ devices, but you can connect a Bluetooth LE heart-rate strap, which will ensure better data monitoring than any wrist-based wearable can currently offer.



Tim had some issues with the Strava app for the Watch but it's very popular on iOS and we hope it gets developed even further.

changed the graph-based workout metrics to numerical stats via the iPhone app, which made for easier viewing at a glance, and customised the watch display by adding an Activity button directly to the clock face.

Meanwhile I kept up my stand-every-hour routine, even if that meant moving about for only a minute or two an hour. I actually received a notification after standing still for too long while cooking. Surprisingly, these prompts didn't get annoying; I welcomed them, especially once my 'achievements' started to mount.

The next day I got a message advising me to up my calories burned goal because I'd overshoot my current one for three days straight. It was moments like these that made the Watch feel alive to my movements and went some way to compensating for its nightly power demands.

Still, I was disappointed by how the Watch only recorded my heart-rate in the background every 10 minutes, especially when running. The Fitbit Surge tracks heart-rate at one-second intervals during exercise, although when it comes to

tracking physical intensity during workouts that involve irregular movements, all of these wrist-based wearables prove pretty much useless. A case in point: the next day I fired up the Workout app on my Apple Watch, defined the exercise as 'Other' and performed a 20-minute CrossFit routine that left me breathless and dripping with sweat, yet my calorie burn count read like I'd gone on nothing more than a brisk walk.

Day 8

I was happy to discover that at least for the Watch's native apps, running without my iPhone was almost no different than running with it. Granted, the Watch relies on an iPhone for GPS, but the Workout app doesn't map your run anyway, and GPS only helps to record distance a bit more accurately. The Watch alone actually got better over time at calibrating my stride, so the mileage remained rather accurate anyway. All of which will come as good news to owners of the sizeable iPhone 6 Plus (I advise a waistband if you simply have to take it with you).



The Workout app is simply laid out and provides data for your most recent activity: run, walk, cycle and others.



Whatever your workout, set a calorie goal and see if you can beat it. Tap the Start button and off you go!



If you would rather set a goal of distance instead of calorie burn, Workout will let you do that too.

ENDOMONDO

Free (in-app purchases)
Endomondo LLC
endomondo.com



Endomondo is one of the least buggy third-party apps for the Apple Watch, mainly because it offloads most of its customisation options to the accompanying Endomondo iOS app. From there you can choose to track a range of activities including climbing, badminton, running, aerobics, basketball and even cricket, and also select which metrics should show on the Watch's screen.

FITLIST

Free (in-app purchases)
Fitmobi, LLC
fitlist.fitmobi.com



Fitlist for iOS excels at logging strength-training routines (it supports cardio workouts less well). Its Apple Watch integration works surprisingly well – opening it displays your daily pre-configured exercises ready for timing, and you can edit the number of reps as well as the weight you want to lift, all directly from your wrist. It also remembers past workouts for you to improve on.

RUNTASTIC SIX PACK

Free (in-app purchases)
Runtastic GmbH
runtastic.com



From the iOS app you can select from a range of ab exercises across three difficulty levels and a series of pre-defined workouts are available as in-app purchases. You can also create a custom workout plan and define the number of sets and repetitions. Routines are initiated and timed from the Watch, which displays animated demos of exercises, logs progress and manages your rest periods.

FITSTAR YOGA

Free (in-app purchases)
FitStar Inc.
fitstar.com



FitStar's Watch integration lets you control yoga sessions from your wrist – it shows pose names, static pose images (to make sure you're doing it right), and counts down the time you need to hold a pose to get the benefit from it. At the end of a session you can feed back its difficulty to your iPhone. The app also works as a remote to start and stop yoga sessions being viewed on an Apple TV via AirPlay.

That said, the third-party Watch apps I tested offered very little over Apple's own when shorn of GPS; none of them made any use of the Watch's heart-rate sensors as Apple has yet to give developers access to the necessary API. The Strava app failed to feed back my cycling sessions to the Activity or Workout apps, which was a tad deflating. Worse still, its workout timer stopped and started randomly during exercises, and was inconsistent with concurrent readings on the Strava iOS app.

Runtastic on the other hand was at least consistent, and provided a nice breakdown of my activity for the month at a swipe, while its post-run analysis provided more granular stats (again, as long as I took my iPhone out with me).

All in all, I was unimpressed with the early versions of the third-party running/cycling apps I tested, so I stuck with the native app, which also offers elliptical/rower/stair stepper tracking. I particularly liked how the Workout app shows your most recent exercise at the top of its session list and entices you to improve on it. I soon filled the 250-music track limit on the Watch and paired it with a pair of Bluetooth Jaybird Bluebuds X earphones, leaving me free to enjoy my music and leave my iPhone at home.

Day 14

After two weeks with the Watch I had completed four five-mile outdoor runs, two eight-mile



cycling sessions and looked on as the Watch intelligently raised the bar on my activity goal, from 1,000 up to 1,400 active calories, a number I was now regularly hitting. I was also sedentary far fewer hours of the day, lost five pounds in weight and reflected on my screen of milestone achievements proudly.

The Workout app shows your most recent exercise at the top and entices you to improve on it

Ultimately, if you're a serious athlete, Apple's Watch might not be what you're looking for. Like other wearables, its focus on quantity rather than quality of movement means it struggles to track complex workout routines. This isn't a failing of the Apple Watch per se; rather, activity trackers in general have a long way to go if they are to record metabolic activity with real consistency. Still, the Watch should please anyone who's happy to limit their tracking to rhythmic cardiovascular activities like running or cycling.

That said, if you're looking to lose weight, you're also going to need to track what you eat. On its own the Watch can't help you with that, but twinned with a decent third-party calorie-counting iPhone app such as MyFitnessPal, or by using a digital weighing scale, the Apple Watch will surely help you meet your fitness goals.

iPad User Magazine

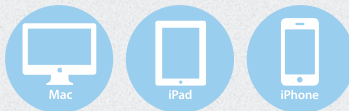
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REVIEW MANIFESTO

Our ratings explained

Our reviews are totally independent; we're not affiliated with Apple or anyone else, nor are we influenced by advertisers. You can trust us.

Prices we quote for products are correct at the time of writing and are the best we can find from a reputable online dealer, excluding delivery.

★★★★★ Rarely given; a brilliant thing that's as good as you can get in its class right now

★★★★☆ A strong recommendation to buy; any concerns are comfortably outweighed by its strengths

★★★☆☆ A good product you should consider buying, but there may be better options for you

★★☆☆☆ Fundamentally flawed either in concept or execution; there are almost certainly better options for you

★☆☆☆☆ A waste of your money and everyone's time; do not buy!



Given solely at the discretion of the Editor only to truly exceptional products.



Our group test winner gets this award; it's the best of its kind at the time of writing.



“Not something used to play Dungeons & Dragons, but a gadget to read the colour of objects”

Nix Pro Color Sensor p85

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iMac with 5K Retina display 3.3GHz

All the pixels, fewer pounds. Is the new entry-level Retina iMac a killer desktop?

★★★★★

From £1,599 **Manufacturer** Apple, apple.com/uk

Processor 3.3GHz Intel Core i5 **Graphics** AMD Radeon R9 M290 2GB
Memory 8GB **Storage** 1TB HDD

➤ We absolutely loved the 5K iMac when it first appeared late last year. The base model rivalled the Mac Pro for computing power and gave us that amazing 14.7-million-pixel screen. At £1,999 it didn't come cheap, but now Apple has cut the price of that original model down to £1,849 and added this new entry-level option, which weighs in at just £1,599. The question is, what corners had to be cut to save that £250?

First, the processor is slower, with a frequency of 3.3GHz compared to the 3.5GHz in the higher model. But it's still an Intel quad-core i5 chip, and it does seem that the only difference between the two is pure speed, and not a big one at that. Benchmarks suggested we'd see a difference of less than 10% in both single-core performance (which is what you need for many standard tasks around the operating system and simple apps) and multi-core (for pro-level tasks like video or 3D rendering).

Don't mind the gap

In fact, the gap turned out to be even less than we expected in our real-world video encoding test – the entry-level machine didn't even take 2% longer than the higher-end version to finish the task. Given that they come with the same amount of RAM, for a lot of uses you'd see no appreciable difference.

The AMD R9 M290X of the upper model has been switched for an AMD R9 M290, though here losing the X makes more of a difference. They both offer 2GB of video RAM, but our Batman: Arkham City 1080p benchmark dropped considerably, from 88 frames per second in the higher model down to 55fps.

That said, performance in Tomb Raider was much closer, dropping from 49fps in the higher model to 42fps when played at 2,560x1,440 on High settings. In all cases, it means that demanding games are very playable but you'll get a little more future-proofing from the higher-end model's 290X chip.

There's one more difference between the two iMacs, though, and this is likely to be the biggest one for performance: storage. This entry-level iMac comes with a 1TB hard drive as standard – an old-fashioned spinning (7,200rpm) drive. The advantage of this is immediately obvious: space. If you're planning to use the 5K iMac for high-level photography or large-scale video work, you're going to need a lot of storage space. That's where hard drives excel, no question.

But when we look at buying a high-performance machine like this, we want the blistering speed of a solid-state drive. It's not that the hard drive in the iMac feels especially slow in use, at least when the machine is still fairly new – apps load extremely quickly, and it doesn't take long to boot at all. But that changes over time, as it fills up and becomes laden with apps and files.

If you're planning to work with things like large image libraries, a solid-state drive will save a fair amount of waiting for files to be opened over time. That said, editing 4K footage in Final Cut Pro was perfectly responsive, with smooth timeline playback as it switched between clips, even with the footage playing back at highest quality.



For the entry-level price, Apple has had to 'budget' with its choice of graphics chip and processor.

In the higher-end iMac, Apple provides a Fusion Drive as standard, which is mostly the best of both worlds – SSD speed for apps and common files, with 1TB of storage overall. You can configure this iMac model with a Fusion Drive, but the upgrade costs £160. If you were going to spend that, we'd say you'd get the most value from spending an extra £90 and just buying the higher-end model, with its other faster components.

Big screen star

Despite these compromises, that 5K display remains the same, and is just as astonishing and almost unbearably desirable. Everything on it looks amazing, from any angle, with accurate colour reproduction. It's a huge amount of space to work in, providing a vast amount of room and detail for creative apps, or the ability to have multiple documents open and readable.

It's totally unforgiving to imagery, of course, since you can have many photos open at 100% with space for editing tools nearby, but that also means that it's unrivaled for getting

in close to inspect and improve them in your editing app of choice.

Ultimately, this iMac is a strange one to recommend. Taken on its own, it's undoubtedly an excellent machine: lots of CPU power, enough graphics capability, and that glorious display. But we believe you really should be looking at an SSD or Fusion Drive for longevity, and that means that you might as well go for the next model up for overall best value. If you don't mind having only a hard drive and want to save the money, then this is a great buy – otherwise, we'd encourage you to invest in the upgrade. **Matt Bolton**



This entry-level Retina iMac is almost as good as its pricier sibling, but we do wish it came with an SSD.

➕ Same glorious 5K display

➕ 3.3GHz system is no slouch

➖ No SSD as standard

➖ 3.5GHz model better value

MacBook Pro 15-inch with Retina display (Mid 2015)

Force Touch comes to the larger model



From £1,599 Manufacturer Apple, apple.com/uk

Processor 2.2GHz, 2.5GHz or 2.8GHz quad-core Intel Core i7
Memory 16GB **Storage** 256GB, 512GB or 1TB of flash storage



We didn't have to wait too long for Apple's largest notebook to gain a Force Touch trackpad, and the 15-inch Retina MacBook Pro is now being offered in 2.2GHz and 2.5GHz models (there's a build-to-order 2.8GHz option, too). As you'd expect from the 'big' MacBook Pro, you get a stunning Retina display, which looks fantastic, and a Core i7 processor that delivers excellent performance when stacked up against the Retina 5K iMac.

Unlike the recently-released 13-inch MacBook Pro, there's no generational upgrade to the CPU. Here you get last year's 22nm Haswell processors rather than the even more power-efficient 14nm Broadwell of the 13-inch version (although that model is limited by having a dual-core i5 processor). This is an odd decision in light of CPU developments, so maybe we'll see the 15-inch models leap straight to Intel's Skylake architecture – but that's likely to be at least a year away.

So, it's easy to be forgiven if you think this all sounds underwhelming and a little underdeveloped for something that should have moved on after almost a year. But it's not the whole story by any means. We looked at the 2.2GHz version only, so couldn't test the new AMD Radeon R9 M370X graphics, but we were very pleased when comparing its benchmark results against the 2.5GHz version from last year, which had a discrete graphics processor in the form of an Nvidia GeForce GT 750M with 2GB GDDR5 memory. This new model's graphics benchmarks are down on last year's 2.5GHz model, which you'd expect given its Intel Iris Pro GPU. For example, frames per second in Unigine Heaven 4.0 were down from 11 to 7.5, but in our Arkham City tests, the frame rate was slightly up from 46 to 49, yet down a fraction at 19 rather than 23 when running at the display's native resolution.

Elsewhere there are some clear wins. Blackmagic's Disk Speed Test brings to the fore Apple's claim that the flash storage in this new model is up to 2.5 times faster, delivering sequential read speeds of up to 2.0GBps (we recorded nearly 1.8). Write speeds were in the region of 1.2 times faster – still very pleasing.

CPU performance was also not far from last year's 2.5GHz model, only really losing out on single-core performance. As for battery life, we gained an extra hour in our streaming test, which is not to be sniffed at. All this adds up to a machine that's been slightly tweaked to eke out every last bit of performance from components that are looking a little aged.

Christian Hall

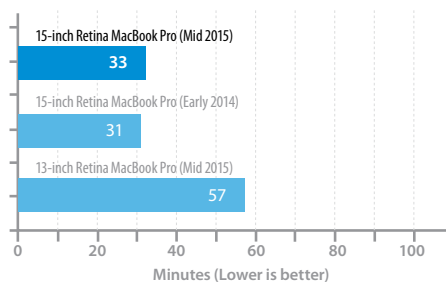
Not innovative by Apple's standards, but the largest of Apple's notebooks is still a stunning Mac.



It seems like this MacBook hasn't really moved on, but tiny tweaks ensure it's still a great machine.

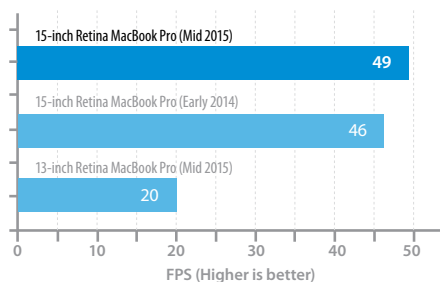
- ⊕ Now with Force Touch trackpad
- ⊕ 2.2GHz model performs well
- ⊕ Good battery life for a 15-inch
- ⊖ What, no Broadwell?

BENCHMARKS | TESTING PERFORMANCE



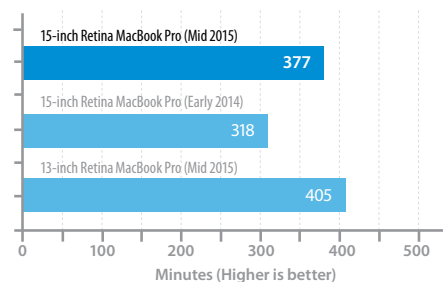
Handbrake video encoding test

We use this free tool to transcode a 30-minute video of quality comparable to a Blu-ray movie to the H.264 format, for playback on Apple devices, using a built-in preset. A lower time to completion (shown in minutes) is better.



Batman: Arkham City running at 1080p

We assess a Mac's graphics processor using the frame rate test built into a recent video game, running at 1920x1080 pixels. A higher rate (in frames per second) is better.



Battery life test

With the MacBook using a Wi-Fi connection to get online, we continuously stream content from BBC iPlayer until its battery is depleted. The display's brightness is set to 50%. Higher values (shown in minutes) are better.

Netgear AC1600 WiFi VDSL/ADSL

A powerful modem and router



£150 Manufacturer Netgear, netgear.com

Connectivity 802.11ac Wi-Fi, VDSL/ADSL, auto detection for Universal DSL, beamforming technology **Media streaming** DLNA

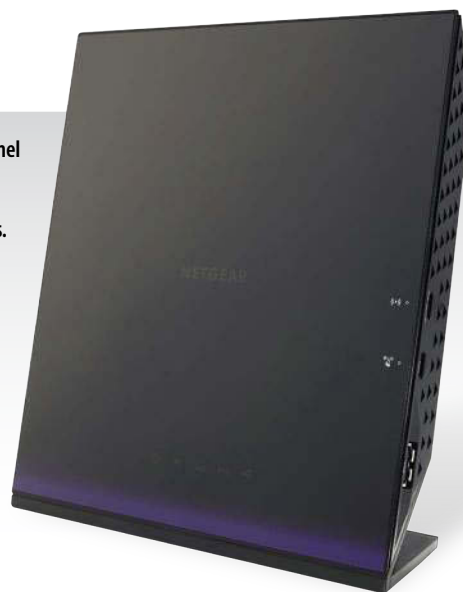
It's not just Apple that makes great wireless routers. Netgear's AC1600 is an innocuous-looking modem and router with a variety of connection capabilities including ADSL, VDSL and gigabit Ethernet for a cable modem. It has five Ethernet ports and can operate on two wireless bands at the same time. Set up is straightforward and there's a friendly browser-based interface plus an app to manage router settings.

This model is designed with heavier users in mind, and nowadays

many households will have 10 or more wireless devices. It uses 802.11ac Wi-Fi, the fastest available to consumers at present, plus beamforming technology for more reliable connections. Transfer speeds were good when copying files, and noticeably quicker than a fifth-generation Apple Airport Base Station which uses the slower 802.11n wireless protocol.

The unit has two USB ports to which you can connect a printer or a USB hard drive and then configure

The rear panel sports a variety of connections.



them using the router's settings. There's DLNA support too, for linking TVs and media players wirelessly. Security is also good, with parental filtering options and guest networking both available.

Despite a slightly lightweight build this is a powerful and flexible router with plenty of options, excellent Wi-Fi speeds and the ability to use various types of internet connection. **Hollin Jones**



A serious amount of Wi-Fi bang for your buck. Friendly to use and with plenty of connectivity options.

- + Easy set up
- + Multi-protocol compatible
- + Wireless file and printer sharing
- Feels a little lightweight

RHA T10i

Why compensate with EQ when you can customise your earphones?



£150 Manufacturer RHA Audio, rha-audio.com

Frequency range 16-22000Hz **Weight** 41g **Cable** 1.35m

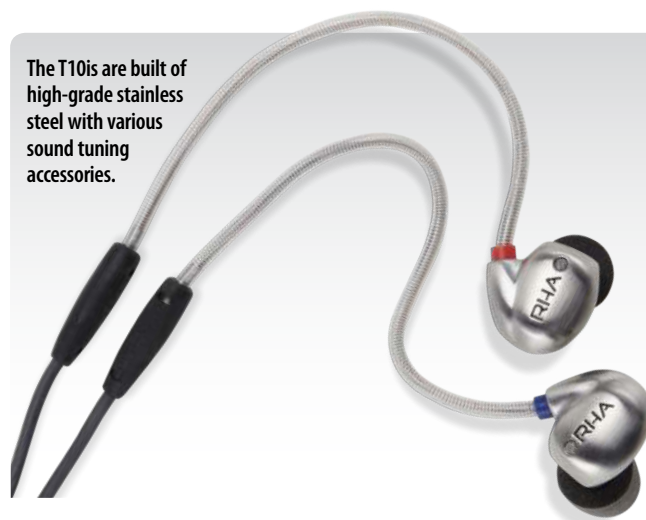
Earphones are still the most discreet way to enjoy music on the move and the T10i is at the top end of RHA's lineup, designed for those who don't mind paying extra for fidelity and flexibility.

The first thing you notice is the beautiful packaging and array of accessories in the box. In addition to 10 pairs of different-sized ear tips in multiple materials and with a stainless steel holder, there's a choice of three metal tuning filters, also in a special metal holder. These can be swapped for a more treble or bass-heavy sound, or a neutral character.

The earphones are crafted from solid stainless steel and sit snugly inside your ear. The wires form flexible ear hooks which feel unusual at first but quickly become normal and help to hold the buds, which are a little heavier than you might be used to, in place. The cable is reinforced and has a very high-end feel, plus there's a three-button remote and microphone for use with compatible Apple devices.

The default, 'reference' tuning filters offer a more neutral sound. To our ears these were a little bright in the mid range on some tracks.

The T10i is built of high-grade stainless steel with various sound tuning accessories.



Switching to the bass filters and choosing a more isolating tip provided a weightier, more balanced sound that was expansive and rich. Having a choice of filters means not relying on a software equaliser to cope with different music, which is a very good thing.

These are serious and great-sounding earphones and the accessories that come with them add genuine flexibility. **Hollin Jones**



An investment, but very high-quality and customisable earphones with excellent reproduction and isolation.

- + Amazing build quality
- + Tune sound with filters and tips
- + Excellent soundstage
- Button is a little high on cable

Nix Pro Color Sensor

Discover the precise colour of real-life things. Sort of



\$349 (about £227) Manufacturer Nix Sensor, nixsensor.com

Requires iPhone 4S or later, iPad third-generation or later, iPad mini or later
Includes Ribbon USB cable, microfibre carrying pouch **Weight** 43g

➤ If you wanted to figure out what colour a pixel in an image is, you could use the eyedropper tool in Photoshop to grab its recipe. But if you wanted to figure out what precise colour something is in real life, you had no such luxury. Until now. Ish. In theory.

This peculiar, enigmatic, vaguely diamond-shaped device, about the size of a disappointingly small cupcake, connects wirelessly to an iPhone and when you press it against a colour, it reads it and sends

it to your device – defining its RGB, CMYK, hex and CIE Lab values. You can save it, compare or share it by email or on social media.

So far as it goes, it seems to work, even if the app feels a bit unfinished. We agree with Nix that in part because the sensor is enclosed you get far more accurate results than if you used a standalone smartphone app which relies on its camera, even if the design of the Nix means the colour you're scanning has to be on a flat surface.

We worry about accuracy, though – not having any objective way to measure or calibrate its results – and thus we have some concerns about who this is for. It's easy to assume it's for creative pros, but it can't be calibrated into a colour workflow and isn't integrated into a system such as Pantone. (Pantone makes its own calibrated equivalent called the Capsure, which is £504.)

The concerns over pro-level accuracy might be fine in a product costing £75, say – something for hobbyists to have fun with – but this is three times that. A previous version converted sampled colours to paint swatches, which could be handy, but that's missing from the current version. **Christopher Phin**



Promising, but expensive – it's not calibrated to a trusted system, and we can't easily test accuracy.

- ⊕ Easy and seems to work well...
- ⊖ ...but we can't test calibration
- ⊖ No export to Photoshop *et al*
- ⊖ Expensive, and who's it for?

The hardware itself is well-enough made, though a little awkward and sharp-edged to slip in a bag.

TEAM TALK



As an art director, I'm interested in

colours to a nerdy degree (fonts too, but that's another story entirely). This looks like a good way to record colour values I see when I'm out and about. That is, if I could justify the spend...



Technology
Tips Guide

iTUNES & iCLOUD

547 TIPS FOR MASTERING APPLE'S
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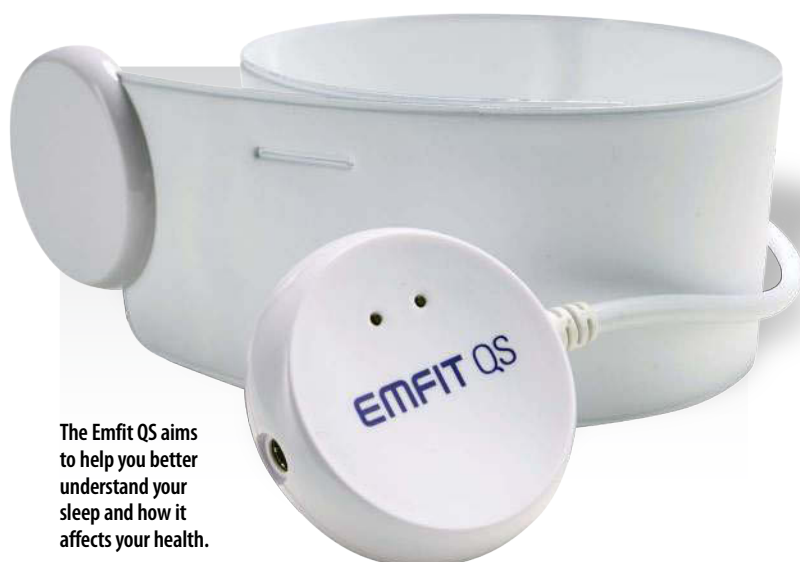
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The Emfit QS aims to help you better understand your sleep and how it affects your health.

Emfit QS

Take the quantified self to the next level simply by having a kip



€274 (about £195) **Manufacturer** Emfit, emfit.com

Data sets Heart Rate Variability, Nervous System Balance, Resting Heart Rate, movement activity **Connectivity** Wi-Fi **Cable length** 1.8m

➤ Fitness tracking has almost exclusively taken the form of wrist-worn devices that record vital stats about your heart rate and activity during sleep. Sleep is vital to overall health and this under-mattress sleep monitor is definitely geared towards athletes, recording the kinds of data you would expect from professional fitness regimes. Yet this is a device that could be used by anyone who has serious concerns about the amount and quality of sleep they get and how it relates to their overall health. We pitted the Apple Watch against other popular fitness trackers in our Get Fit feature on page 74, but we couldn't add sleep quality into the mix; the Apple Watch can't record that.

Though some wristbands track sleep, such as the Jawbone Up, a static strip that's more part of your bed than part of you is surely the better indicator. The tech inside the QS is comprised of electroactive polymers laid out in a strip that has two adhesive tabs that stick to the underside of your mattress, whatever its depth. Connected to that is a

wireless element that communicates with your router. We had some problems setting it up, but resetting the router and using the WPS method resolved that. Emfit says it hopes new firmware for the QS will address issues with some routers.

The QS has no buttons, and you can't really configure anything in its web interface. But you're supposed to just let it do its analysis – it knows as soon as you jump into bed and starts monitoring. It's serious science, with three-stage sleep classification in addition to total duration. You'll see percentages of REM, light and deep sleep tracked alongside heart rate, respiration rate and physical activity – yes you really are that fidgety at 4am! We can't verify these recordings scientifically, but to see your night's sleep plotted this way is a real eye-opener. **Christian Hall**



A wealth of sleep data. Probably far too much for most people, but there's nothing quite like it found elsewhere.

We're still loving...

MOPHIE SPACE PACK

Alex has the power (and storage) with this seriously good case



How many times have you gone out for the day, only to find that your iPhone is limping along with just 2% battery by the end of the afternoon? Unless you somehow manage to find a charging point, your iPhone will quickly become a rather expensive paperweight.

Luckily, I think I've found a solution in the Mophie Space Pack. As soon as my battery starts to run low, I just need to flip a switch on the back and the case takes over, giving me 100% extra battery. That means less time worrying about conserving power and more time enjoying my day.

But it's not just your run-of-the-mill battery case, as it also has built-in storage that doubles the capacity of my iPhone 5. The 6 Plus version is even more impressive and can add up to 128GB, meaning you'll end up with a mammoth 256GB of storage to play with. That it manages to fit both power and storage into such a lightweight case is seriously impressive.

No matter how trigger-happy I get with the camera or how many 12-hour Cyndi Lauper playlists I want to blast through, I know I'm not going to run out of space – or battery power – any time soon. That's great news for me, although maybe not so good for the people sitting next to me on the bus.



STARTECH AIRPRINT

★★★★★

£54 Manufacturer StarTech, startech.com

1 There are quite a few printers now available that can use Apple's AirPrint for printing from iPhones and iPads, but many people still have older printers that don't support AirPrint. StarTech's AirPrint Server solves that problem as it can be connected to a USB printer in order to add support for AirPrint. It can also add Wi-Fi capabilities to older office printers that don't have Wi-Fi at all. The price tag is admittedly a little steep, but for many people it may still be cheaper than forking out the cash necessary for a brand new printer. **Cliff Joseph**

Mac
FORMAT
VERDICT *An undoubtedly useful option for updating old printers that lack AirPrint or Wi-Fi capabilities, albeit an expensive one.*

TDK TREK FLEX SPEAKER

★★★★★

£70 Manufacturer TDK, tdkperformance.com

2 TDK's Trek Flex is a beer-can-sized Bluetooth speaker that promises 360 degrees of room-filling sound. It's dust-proof, shock-proof and water resistant, but not waterproof. Its small size, surprisingly loud distortion-free output and eight-hour battery should make it a perfect party speaker, but ironically it's better suited to acoustic folk and delicate electronica than party bangers or rock anthems. The small speakers struggle to deliver decent bass, and we also found rock and dance sounded muddy even at full volume. **Gary Marshall**

Mac
FORMAT
VERDICT *This rugged, shockproof, water resistant Bluetooth speaker can play music loud, but it lacks low-end thump.*

MYCESTRO

★★★★★

\$149 (about £98) Manufacturer Innovative Devices, mycestro.com

3 Mycestro is a small, three-button device worn on your index finger that allows you to control your on-screen pointer, instead of a mouse or trackpad. Touch your thumb to the side of the Mycestro and wave your hand in the direction you want the pointer to move, or slide your thumb to scroll. Designed for use in confined spaces, it does take a bit of getting used to and can feel a little imprecise – plus you'll need to raise the sensitivity lest you fall victim to wrist strain. While it has some potential, the humble trackpad is still be a better bet for now. **Alex Blake**

Mac
FORMAT
VERDICT *It's certainly a nice idea, but the Mycestro needs more polish before it becomes an essential travel computing accessory.*

POWERCUBE EXTENDED USB

★★★★★

£18 Manufacturer Allocacoc, allocacocshop.com

4 The Allocacoc PowerCube sounds like something from an *Avengers* film, but it's really just a variation on the old-fashioned power extension lead. It includes four mains sockets on a 1.5m lead, and its compact design means you can easily sit it on or beside your desk within easy reach. The PowerCube is also two USB ports (5V/2.1A output) for charging devices such as an iPhone or Apple Watch. It can charge an iPad as well, although it might be a bit slow as its power output isn't quite as high as Apple's official 12W charger. **Cliff Joseph**

Mac
FORMAT
VERDICT *The compact design of the PowerCube makes it a handy option if you have lots of devices that need charging.*

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4 of the best...

MacBook add-ons

Handy travel essentials to make even more of your Apple notebook

PLUGBUG WORLD

★★★★★

£40 Manufacturer Twelve South, twelvesouth.com

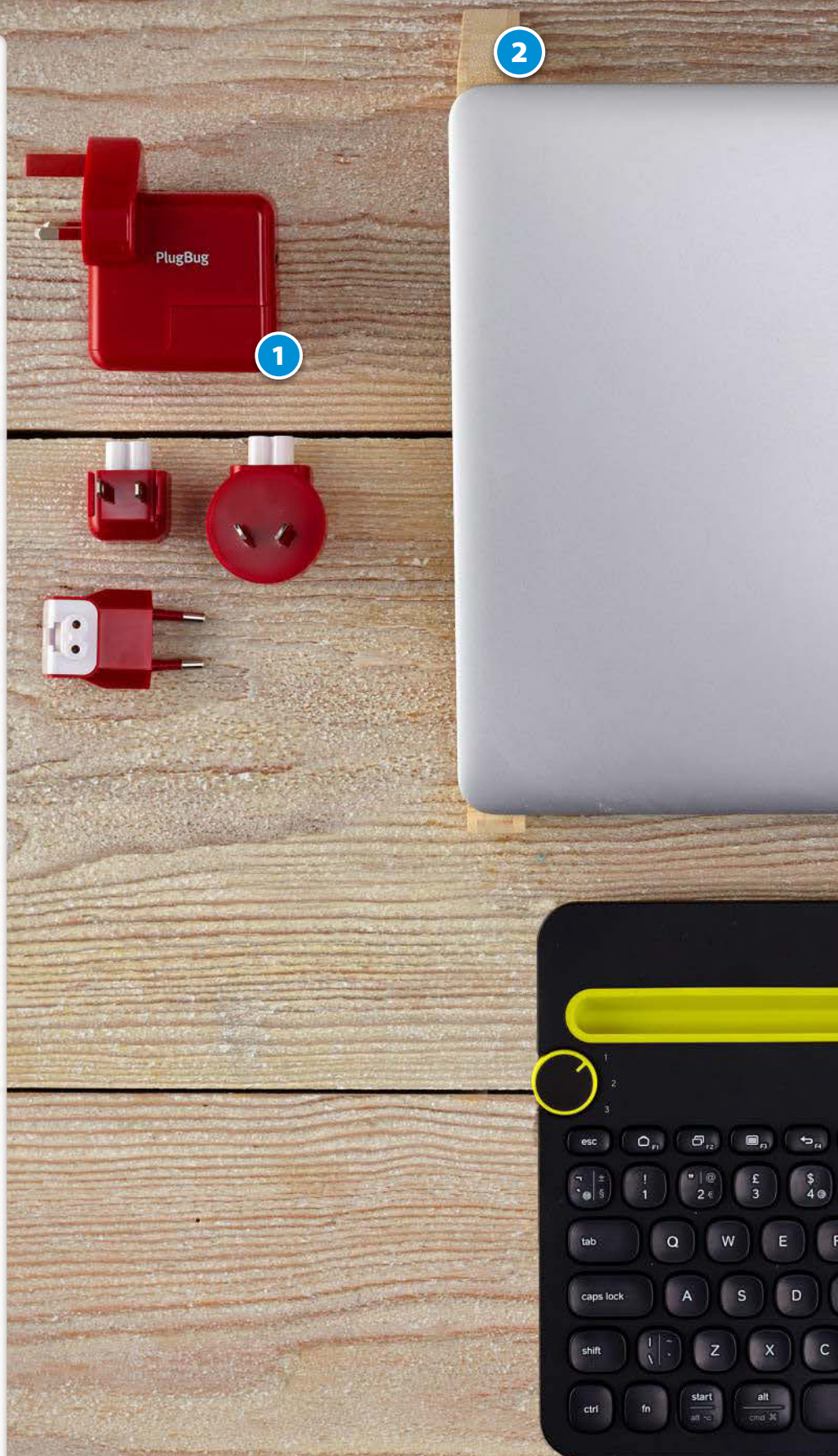
1 If you travel abroad, the advantage of this over Apple's World Travel Adapter Kit is with its USB wall charger. And it's no ordinary charger: it has a passthrough power port that connects to a MacBook's power adapter, enabling your Mac and a USB device to charge from a single wall socket – handy if your Mac's ports can't charge a Retina iPad. The PlugBug is rated to 10W, so Retina iPads take a little longer to reach a full charge than with Apple's 12W adaptor, though an iPhone 6 or 6 Plus charges faster.

EASEL STAND

★★★★★

£22 Manufacturer iSkelter, iskelter.com

2 This eco-friendly bamboo stand is designed to be a portable (at 155g) and minimalist-looking with its two thin arms. It looks great and its strong magnets make the two halves snap together and stay put when you throw into a bag. We're using with a MacBook that's got an SSD inside, but you might want to think twice if you're nervous about such strong magnets near where the HDD is. It's not adjustable in any way either, so if you don't like the angle you're stuck with it.



NIFTY MINIDRIVE

★★★★★

£30 **Manufacturer** Nifty, eu.minidrive.bynifty.com

3

If your MacBook has an SD card reader that's doing nothing for you, the MiniDrive puts it to good use. It's a microSD card reader designed to fit in a MacBook's built-in reader. Ours came with a 4GB card (some bundles include 2GB), but you can swap it for a larger capacity, enabling you to boost your Mac's built-in storage by as much as 100%. We found the MiniDrive a bit fiddly to align with the slot but, unlike some rivals, you can insert a bundled tool into the trench on its edge to remove and upgrade it.

LOGITECH K480 BLUETOOTH MULTI- DEVICE KEYBOARD

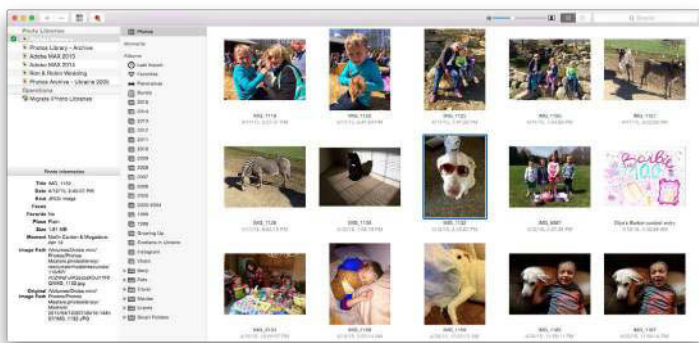
★★★★★

£50 **Manufacturer** Logitech, logitech.com

4

This Bluetooth keyboard lets you type on your Mac, iPad or iPhone and switch between them as and when you need to. It's bulky and slightly toy-like, but has a tray to stand your devices at a comfortable angle, and there is room for an iPhone 6 Plus to sit alongside an iPad (both in the portrait position). The keyboard is spacious and features an array of buttons to control your devices, such as screengrab, lock and Home buttons. It's a lot louder than typing on a standard Apple keyboard, but it's a great option if you need to work with ease while out on your travels.





Purging duplicates with PowerPhotos works like a charm – albeit with quirks.

PowerPhotos

Photo management made easy



\$19.95 (about £13) Developer Fat Cat, fatcatsoftware.com

Requirements OS X 10.10.3 or higher



With the release of Yosemite, iPhoto and Aperture are dead and buried, replaced by a more efficient, iOS-like, iCloud-connected solution. Unfortunately, the built-in Photos application does little to eliminate some of iPhoto's long-standing limitations, such as managing more than one image library. Thankfully, Fat Cat Software comes to the rescue with PowerPhotos, a third-party companion to help create, organise, duplicate and even search between multiple libraries.

PowerPhotos works in conjunction with Photos, launching or quitting the main application as needed. It's the next generation of Fat Cat's insanely handy iPhoto Library Manager, offering a better way to view basic metadata without having to summon Photos' pesky Info window, and you can quickly hop between different libraries. There's a convenient list view to sort or display photos by date, file name, keyword and other criteria without thumbnails slowing things down.

PowerPhotos only works with new or migrated Photos libraries. The software streamlines the migration process for existing iPhoto or Aperture libraries by reducing it to a few clicks of the mouse, rather than having to open each one manually.

PowerPhotos can also be used to identify duplicates, with full control over how such copies will be dealt with. Duplicates are placed in a new album, from where they can be deleted or have a keyword assigned to them. Purging duplicates worked like a charm on migrated Aperture libraries, with the exception of our main iCloud Photo Library. PowerPhotos seemed to go through the motions, but completed with an error despite creating a duplicates folder without any photos inside.

PowerPhotos is missing some of iPhoto Library Manager's advanced features, such as the ability to merge, rebuild and copy photos between libraries. As a result, PowerPhotos is free for new and existing iPhoto Library Manager 4 owners and hopefully this missing functionality will be added. **J.R. Bookwalter**



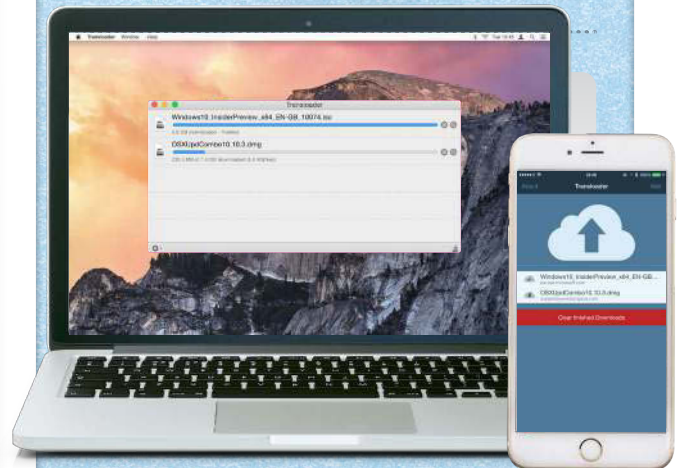
PowerPhotos may lack the punch of its predecessor, but it's indispensable for those making the transition to Photos.

- Manage multiple Photos libraries
- Find and remove duplicate images
- Missing advanced functionality
- May struggle with iCloud images

We're still loving...

TRANSLOADER

Alan is well chuffed to use iOS to tell his Mac to download stuff



Transloader (£4.49, eternalstorms.at) is one of those apps whose simplicity belies its usefulness. When you come across a file you can't download and use on iOS, you copy its address to the clipboard and paste it into the iOS app, which saves the link to iCloud – yes, you'll need to be signed into the same iCloud account on your Mac and iOS device. This gives the companion app on your Mac a nudge to download the file.

The Mac part offers sensible customisations. It normally displays a list of past and in-progress downloads in a window. Don't worry if you find that cumbersome because the app's preferences include a checkbox that hides the window and replaces it with a status icon in the menu bar. That icon reveals a drop-down list of downloads. (We wish Safari had something similar – or, better, Notification Center offered a widget to monitor all download activity.)

You don't even have to monitor Transloader's progress if you have other things to do, because it plugs into OS X's notification system. This enables you to casually catch up on what has downloaded whenever you have a free moment. Alternatively, if it's important to find out as soon as a download has finished, you can set the app's notifications to persist on your desktop so you can't miss them.

Also handy is the ability to choose a destination for files other than your Downloads folder, which is shared with Safari and potentially many other apps. Choosing a separate folder might make it easier for you to find things if the main Downloads folder is already cluttered because of those other apps.

Lightroom 6

Adobe's pro photo enhancer gets an update



£103.88 or £8.47/month Developer Adobe, adobe.com

Requirements OS X 10.8 or higher



Lightroom is Adobe's professional photo enhancing and cataloguing program

and it's designed to be used alongside a regular image editor such as Photoshop. Indeed, if you buy it using the Creative Cloud subscription option instead of a one-off fee, you'll get Photoshop included. Lightroom's editing tools don't reach the same depths as Photoshop's, but it's made with a slightly different intention – simpler, non-destructive improvements to photos, rather than full editing of images with lots of layers.

Sweeping change

Adobe has introduced new tools for organising photos, but the main additions are to the editing tools. There are also exciting new panorama and HDR tools, and it's now possible to "brush out" areas adjusted with the Graduated and Radial filter tools. Lightroom 6 also introduces face recognition, new HTML5 web galleries and a major upgrade to the Slideshow tools.

Blending several images to make an HDR composite is simple. There are options for 'deghosting' if you

Lightroom's editing tools offer simpler, less destructive effects than Photoshop's.

have objects moving between the frames, such as leaves and branches or passersby. It can take a minute or so to blend images, eventually producing a realistic one with shadows and highlights intact

If you're an enthusiast, expert or pro and need software to enhance your photos, Lightroom is the best choice

but without unrealistic tonal compression or flattened contrast. Panorama merges result in pleasingly seamless compositions.

It's now possible to manually mask out areas modified by the Gradient and Radial Filters; sometimes you'll have buildings

or other objects jutting out into a darkened sky – and you don't want these objects darkened by the Gradient Filter. It's also now possible to move the "pins" created by the Adjustment Brush.



Before and after: Lightroom lets you see how your changes will take effect.

TEAM TALK



As something of an amateur photographer (nowadays, aren't we all?), I've used Lightroom to organise and edit my image library – scenic holiday snaps I'm really chuffed with, rather than my kids pulling faces.

It's perhaps a little odd to find face detection and recognition tools in a professional image cataloguing application, but it will appeal to those who used the feature in Aperture or iPhoto.

At first, Lightroom can still identify unique faces and group them together, but you have to tell it who these people are. The more you use it, though, the more it's able to suggest names automatically.

Small improvements

There are many other small improvements and additions too, which add up to make Lightroom a great next step for people moving on from Aperture or iPhoto/Photos.

If you're a photo enthusiast, expert or professional who needs software to organise, output and enhance your pictures, Lightroom is the best choice – albeit with a few minor quibbles. **Rod Lawton**



Plenty of good improvements ensure Lightroom remains the go-to choice for pro photographers.

- ⊕ Good catalogue and search tools
- ⊕ HDR and panorama merging
- ⊕ Powerful, careful editing
- ⊖ Subscription needed for Cloud

Ghostnote

Make notes on anything and keep them discreetly tucked away



£3.99 Developer Thomas Peterson, ghostnoteapp.com

Requires OS X 10.9 or higher

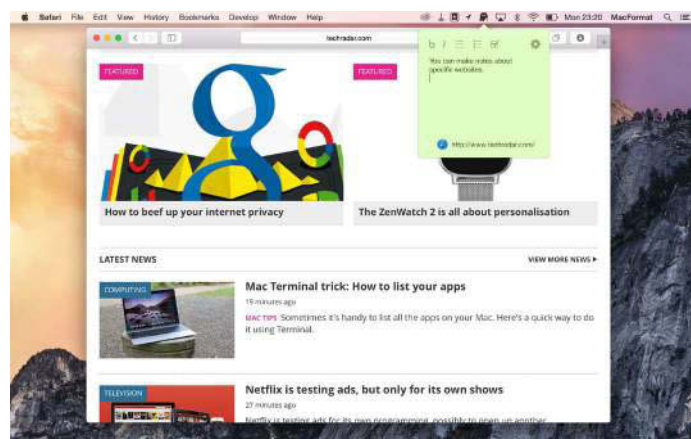


Ghostnote is a Post-it-style app with a difference. Instead of littering your Desktop with notes, it's made them context-aware. You can apply them to a document, folder or dozens of supported apps.

When Ghostnote is running its icon sits in your Mac's menu bar. Click on it while in an app or with a folder or document selected and an empty note drops down, ready to be filled in. Text in notes can be formatted, including making it an ordered list or bullet points. And you can add tasks with tick boxes next to

them. Note colours can be customised and detached from the menu bar so they float on the desktop. In some apps, you can add notes to individual documents and, in Safari, to specific websites.

It's not always the most intuitive app, however. By default the feature that allows you to add notes to documents and folders isn't active. If you click on a file or folder in the Finder, you'll only be able to add a note to the Finder as a whole. To add support, you must click on the Ghostnote menu bar item, click the gear wheel and choose Install Document Support. You're then



Ghostnote notes can be attached to applications, folders or documents.

asked to open a folder, though which folder isn't specified and no feedback is given when installation is successful. It's rough edges like this that detract from Ghostnote's appeal.

On the plus side, the use of icons at the bottom of notes means your never in any doubt about what each note is attached to. **Kenny Hemphill**



An excellent tool that anyone who constantly writes things on scraps of paper will find useful.

- + Add notes without cluttering
- + Notes are customisable
- + Can export notes
- Counter-intuitive in places

CleanMyMac 3

Need to quickly reclaim disk space? CleanMyMac 3 offers to make it so



£34.95 (£17.50 upgrade) Developer MacPaw, macpaw.com

Requires OS X 10.8 or higher



The third iteration of MacPaw's Mac cleaner is here and includes several much-needed improvements and new features.

There's a new menu bar icon to offer convenient access to the main program, as well as a quick summary of drive space, memory and Trash. The main interface also gains an optional dashboard view with a detailed breakdown of key stats.

The program includes six cleaning tools and five utilities – four of which are new to version 3 (Mail Attachments, iTunes Junk, Maintenance and Privacy). There's

little ground-breaking here, although we like the new Maintenance tool's promise to fix application errors and optimise your disk and search index.

One criticism of past versions is the fact it's too easy to scan and clean up with the two-click Smart Cleanup module. It's a risky approach that may result in you accidentally deleting a critical file or setting. While CleanMyMac 3 does a better job of providing explanatory notes for each cleaning tool, it still doesn't make it mandatory that you review what it's found before going further. This is



The Smart Cleanup module makes it easy – too easy – to scrub your hard drive.

especially important considering no fail-safe mechanisms are provided.

CleanMyMac 3 is a slick, fast app that will clean your Mac. But the lack of an undo tool or backup protection makes it hard to recommend to the very people it's targeted at: less experienced users who want a simple, quick and safe cleanup tool. **Nick Peers**



CleanMyMac is slick, efficient and gets the job done – sadly, though, in many ways it's too efficient.

- + Modules add cleaning power
- + UI clearly displays key stats
- No built-in fail-saves
- Free tools available elsewhere

Boom 2

The ultimate solution for people straining to hear Mac speakers?



£10.99 Developer Global Delight, globaldelight.com

Requires OS X 10.10 or higher



The speakers built into the vast majority of computers sacrifice a lot, by way of volume

and fidelity, to fit inside the increasingly slim casings of modern machines. Apple does remarkably well with its MacBook Pro speakers, and the 15-inch model in particular sounds better than you would expect, by being able to have slightly larger speakers. As more people listen to music, radio, film and use Skype without plugging in external speakers, however, the limitations of built-in audio hardware become clear. On smaller models, it's particularly pronounced.

Boom!

Boom 2 is an application that intercepts your system audio and modifies it, either based on its own best guess or your settings, to squeeze more gain and clarity out. The idea is that you can make films, music or conversations louder, clearer and more crisp without external speakers. Add external speakers and the application adapts itself to those anyway.

Since you can't drive your Mac's internal audio hardware further than

Set your own volume and equalisation for your Mac's audio output.

its physical limits, Boom 2 uses audio processing to achieve its aims: the same kind of processors musicians might use in Logic or GarageBand, only here they are mostly hidden from view. There's a volume slider that shows the normal maximum

You can make films, music or conversations louder, clearer and more crisp without external speakers

volume and then the amount by which you can boost it, and an equaliser section complete with presets for different kinds of music or different uses. Each band can be manually adjusted and you can save your own presets. There are also

effects, which include the ability to add ambience or fidelity.

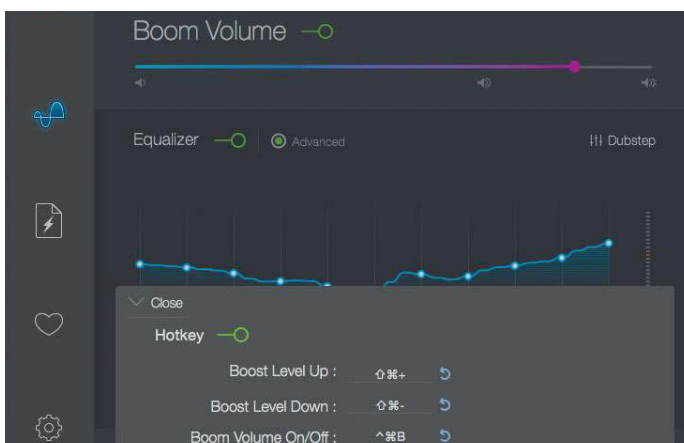
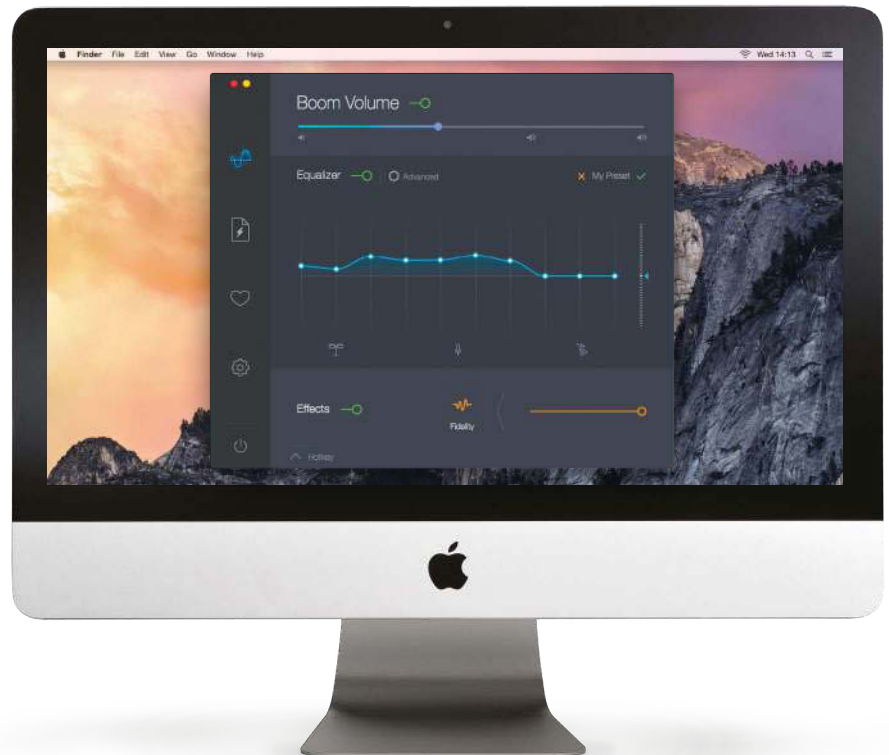
Boom 2 works in real time but also lets you process batches of files using the current boost settings. You can use various audio and video file formats and it works by analysing

and processing the audio in the files then re-saving them out.

Mixing it up

The application does exactly what it claims and is capable of squeezing more volume out of your Mac's speakers than you could otherwise manage. The equaliser section also lets you fine tune any film, music or radio stream to get, for example, better bass or clearer vocals.

Whether you'd want to permanently re-process films and music using the conversion option is up to you. Someone has mixed that music or soundtrack, so permanently changing it will mess with that mix. The option is perhaps useful for old recordings you have digitised as it provides you with the same set of tools you'd get in an audio wave processor, albeit with more basic yet friendly controls. **Hollin Jones**



Convert music or film soundtracks by dragging them into the app.

TEAM TALK

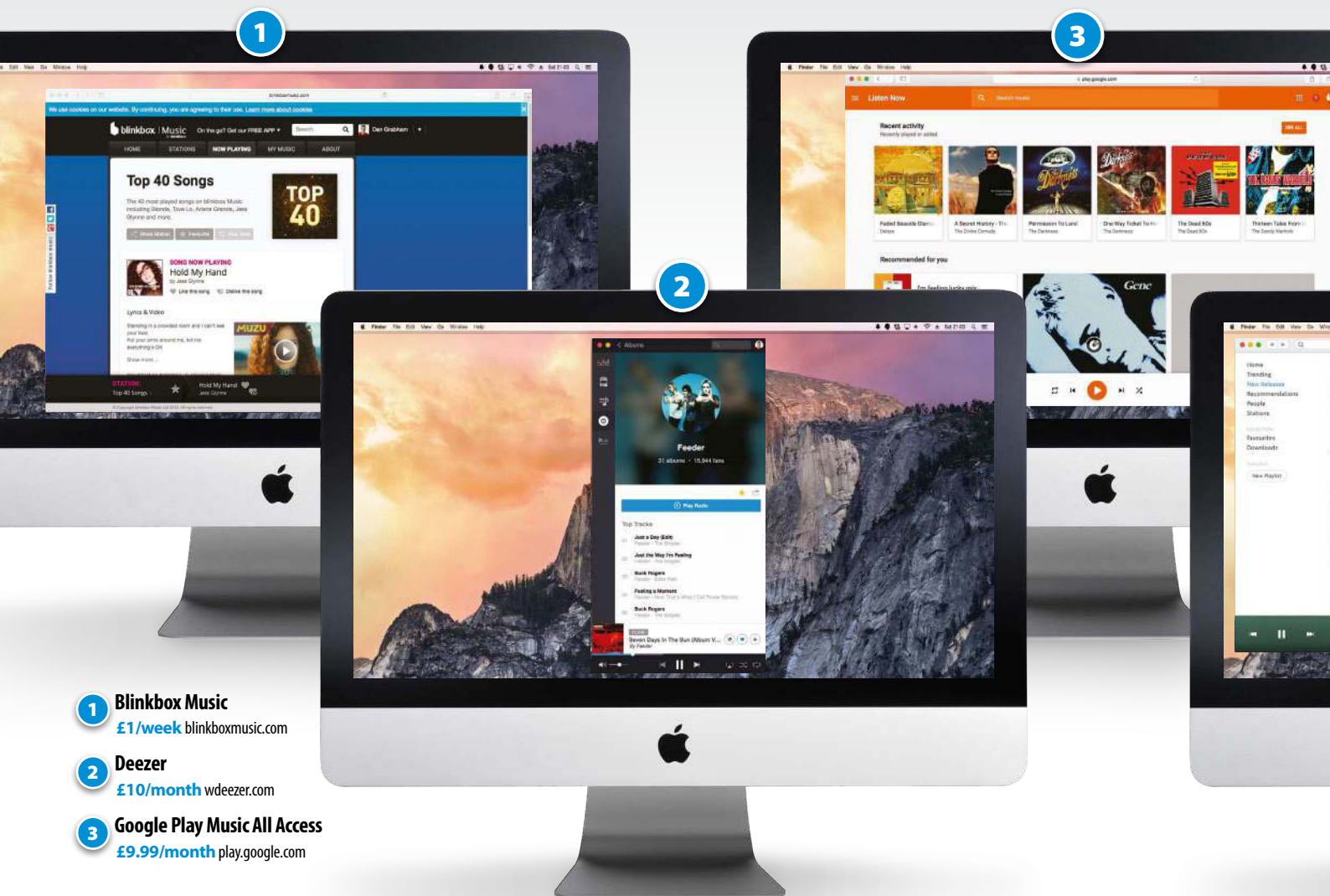


From *Apocalypse Now* to *Drive*, I love a Sunday film session on my MacBook Pro – but with external speakers. With Boom 2 however, there's no need for them. So, um, does anyone want to buy my speakers off me?



A good way to boost and fine tune your Mac's audio output for music, films and conversations.

- + Easy to use
- + Can work automatically
- + Manual control of EQ if preferred
- Re-processing may be unwise



- 1** **Blinkbox Music**
£1/week blinkboxmusic.com
- 2** **Deezer**
£10/month wdeezer.com
- 3** **Google Play Music All Access**
£9.99/month play.google.com

Music streaming services

Forget downloading, streaming is where online music is at. But which services rival Apple Music?

➤ Sales of music downloads have been on the slide ever since streaming arrived. Many of us like to listen to individual songs rather than an entire album, make compilations, check out recommendations, or hear whatever takes our fancy – rather than be restricted to what's in your music downloads library.

And that's what makes streaming ideal. It allows you to listen to a massive selection of music (with some exceptions) for around the price of an album a month. Offline listening is often permitted too, while some services have more flexible pricing structures and even free, ad-funded

tiers (designed to lure you in). It's a competitive market and will become even more so with Apple Music's release. At press, Apple Music's features had been announced, but we don't yet know its streaming quality, so we couldn't include it in this test. See the next issue of *MacFormat* (out Tuesday 4 August) for an in-depth look at Apple's new music streaming software.

Streaming can be about what services you don't get as much as the services you do. Originally, Spotify was Europe-only, launching in the US later.

You can listen to pretty much any music you like for the price of an album a month

But there are plenty of services that aren't in the UK as yet, including Amazon's Prime Music (we expect it to come here at some point, though) and Pandora (which was obligated to restrict itself to the US, Australia and New Zealand). This is often because of music rights, which aren't always signed off on a global basis.

Either way, it's hard to make money from streaming music – for artists, record companies or streaming services – but it is possible. As with music downloads, it looks like we'll end up with several big tech companies, plus a few that got into the market at the right time (such as Spotify), dominating. And that has to include Apple and its Beats Music subsidiary.

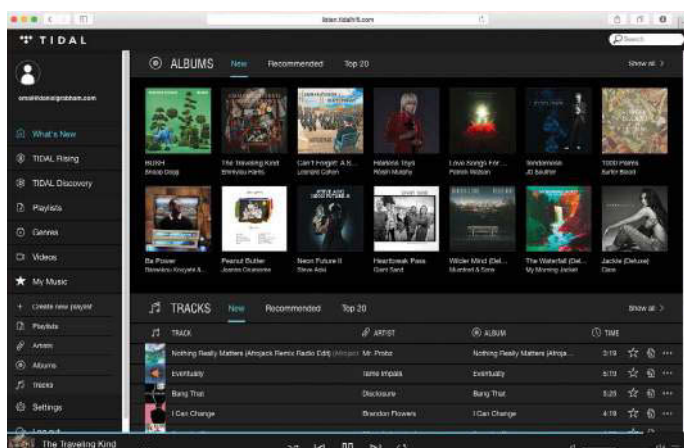
For now though, let's take a look at the best streaming services currently out there, so we can see what Apple Music is up against. **Dan Grabham**



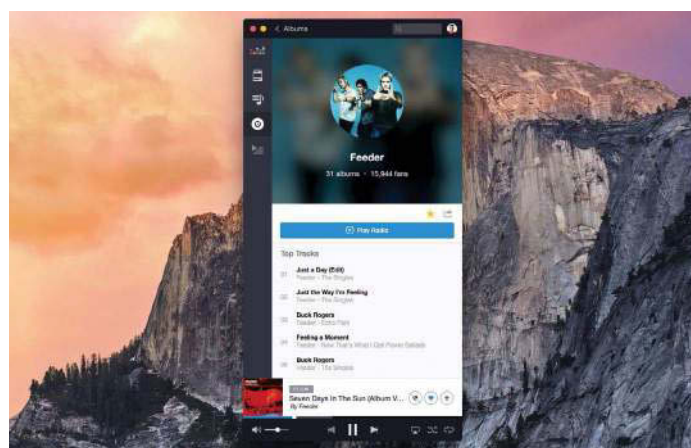
MUSIC STREAMING | AT A GLANCE



	Blinkbox	Deezer	Google Play Music	Rdio	Spotify	Tidal
Website	blinkboxmusic.com	deezer.com	play.google.com/about/music/allaccess	rdio.com	spotify.com	tidalhifi.com
Is there a free service?	Yes: ad supported, not latest stuff	Yes: ad supported, lower quality	Yes: upload 50,000 tracks to stream	Yes: ad supported, 'radio station'	Yes: ad supported, lower quality	No
Subscription pricing	£1 per week to stream via apps	£10 a month (inc mobile streaming)	£9.99 a month	£9.99 a month	£9.99 a month	£9.99 a month for Premium
Streaming quality	192Kb/s	320Kb/s	320Kb/s	320Kb/s	320Kb/s	320Kb/s
A CD-quality option?	No	Yes: Deezer Elite, £15 a month	No	No	No	Yes: Tidal HiFi, £20 per month (free trial)
Catalogue size	12 million tracks	35 million tracks	18 million songs	30 million songs	20 million songs	25 million songs
Mac app available?	No, but you can play through a browser	Yes	No, but you can play through a browser	Yes	Yes	No, but you can play through a browser
iOS app available?	Yes	Yes	Yes	Yes	Yes	Yes, £19.99 per month (free trial)



Tidal can seem difficult to navigate at first, as there's so much curated content.



CD-quality services point the way to the future of music delivery.

TEST ONE

EASE OF USE

Which is simplest to get to know?

➤ Blinkbox is free to sign up for, simple to navigate and has different stations you can listen to. As such, it's easy to use but limited. Tidal can seem a little difficult to navigate at first – there are so many curated playlists and albums on offer that it bewilders. It's a problem that Spotify used to suffer from before it improved its apps. Deezer, Google, Spotify and Rdio are all complex services, but all have done a lot of work to ensure everything is reasonably easy to find.

All of these services offer playlisting, but collections of starred, favourited or playlisted music have the potential to become unwieldy, so each service offers something to

help with this – Rdio has 'favourites', for example, while Spotify has My Music, essentially somewhere you can save music if you want to quickly get back to it. Google organises your own music in My Library. The most complicated bit with any of these services is often navigating the payment screens and downloading the apps themselves.

TEST RESULTS

Blinkbox	★★★★★
Deezer	★★★★★
Google Play Music All Access	★★★★★
Rdio	★★★★★
Spotify	★★★★★
Tidal	★★★★★

TEST TWO

FEATURES

Which offers the most bells and whistles?

➤ We love the idea of being able to stream our own tracks using Google Play and better still you don't even need the premium All Access service for that. Blinkbox is the most limited streaming service on offer here. There's little in terms of on demand, instead you just select from a variety of 'stations' and you can skip songs. The streaming quality is also the worst out of our contenders. However, Deezer does well in this category because it possibly has the strongest music catalogue, but there's also a lot to love about the service itself. Spotify's sharing and playlisting offering is superior to some of the others. We awarded extra points to Spotify, Deezer and

Rdio for offering ad-supported unlimited streaming from desktop browsers. Special mention must also go to Tidal and Deezer for offering CD-quality streaming at a bit rate of 1,411kb/s. These services are expensive (though Deezer's is cheaper at £15 a month rather than £20), but they point the way to the future of music delivery.

TEST RESULTS

Blinkbox	★★★★★
Deezer	★★★★★
Google Play Music All Access	★★★★★
Rdio	★★★★★
Spotify	★★★★★
Tidal	★★★★★

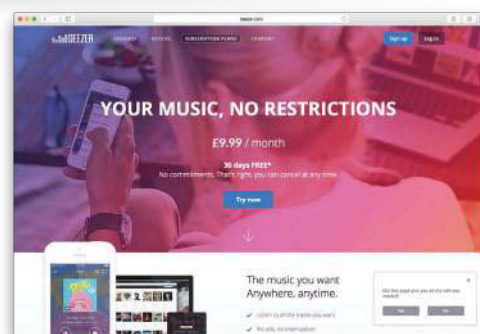
HOW WE TESTED | COMPARING THE SERVICES

We've gathered some of the most interesting services around right now – aside from Apple of course. There are the big players, Spotify and Google Play Music All Access, then there are the long-established Deezer, Rdio and Tidal (recently bought and relaunched by Jay-Z). And finally we've chosen Blinkbox, formerly owned by Tesco.

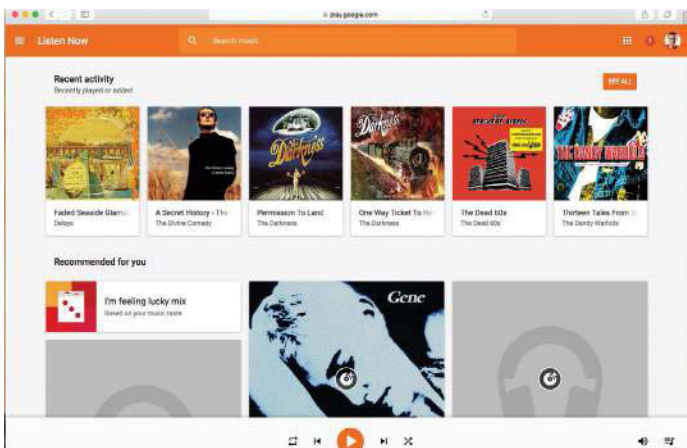
All of these services can stream on desktop and mobile, so we wanted to see what set them apart. Do they have a Mac app? Is there an option to have higher quality music streaming even if it costs more? All the services

vary slightly in terms of the levels of service offered, even if many tiers are similarly priced – a sign that competition is alive. While many services are currently similarly priced for certain tiers (£9.99 is a favoured sum per month), this might change as more companies enter this already crowded market.

It's also worth remembering some services have vastly better music catalogues than others. All the services we have on test offer a good array of artists but you won't any Beatles songs on any of them, for example, because of their deal with Apple.



All services stream adequately on desktop and mobile.



It's difficult to pick out a bad app – playback is slick and instant for the most part.

TEST THREE

MAC AND iOS APPS

Which of the apps is better?

➤ The competition is fierce in this category. And no wonder. Good apps are a must for streaming services, otherwise users will simply totter off elsewhere.

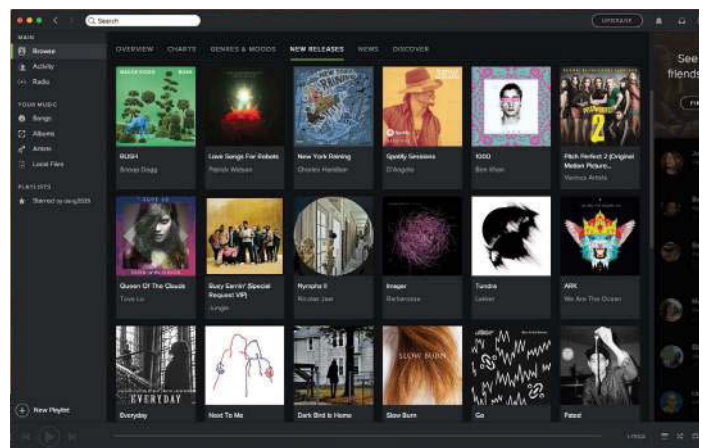
Rdio's Mac app is one of our favourites, as it has really easy navigation and flow to it. It's what iTunes should be like. Deezer's Mac app is in beta, but it's also lovely and very well designed. It's also small, so you can have it as a sidebar on your desktop, but it gives you access to all you need. The great thing about Spotify's apps is that they're feature packed. That's really what wins the day for Spotify here – the playlisting is flexible, while sharing of music and playlists is also fantastic.

As for the others, browser-based playback is the way of things on the Mac, so we looked at their iOS apps for this category.

It was difficult to pick out a bad app in the group. Playback is slick and instant for the most part (although understandably this isn't quite the case for the CD-quality streaming offerings).

TEST RESULTS

Blinkbox	★★★★★
Deezer	★★★★★
Google Play Music All Access	★★★★★
Rdio	★★★★★
Spotify	★★★★★
Tidal	★★★★★



With Spotify you will need to go premium to stream music on your mobile device.

TEST FOUR

COST

Which is the best value for money?

➤ With the free services, if you don't mind ads, there are many options. All offer a top service – ads were the least annoying on Rdio. You need to go premium to stream on mobile, though.

It's fairly difficult to assess which are better value for money in terms of the £10-a-month crowd, but we scored depending on the amount of platforms you could use your subscription on – after all, you can pay £10-a-month for Tidal, but there's no specific Mac app so the experience isn't as good as the Spotify, Rdio or Deezer options. Blinkbox may seem cheap for mobile access, but it might not be worth it – after all, if you want curated 'radio

stations', you might as well use an app such as TuneIn Radio.

We felt Google Play represented the best value, because you get so much for free. You can upload 50,000 of your own tracks – without ads. Finally, Deezer Elite is ahead of Tidal in terms of the cost of a CD-quality subscription, as it's £15 instead of £20 a month.

TEST RESULTS

Blinkbox	★★★★★
Deezer	★★★★★
Google Play Music All Access	★★★★★
Rdio	★★★★★
Spotify	★★★★★
Tidal	★★★★★

THE WINNER | SPOTIFY

This was a tough decision. It was very close between Rdio, Deezer and Spotify. All offer brilliant levels of service, great Mac apps and, for the most part, are a joy to use.

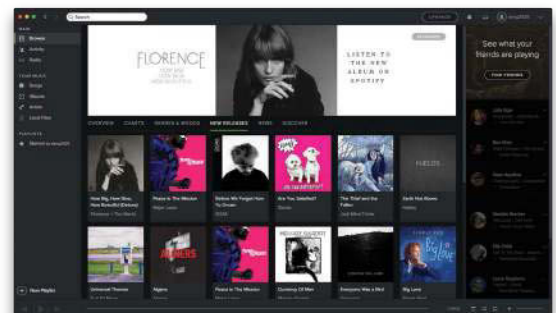
However, Spotify's apps are just that cut above, its feature set and settings options just that bit more refined. But it's so close, you'd be equally happy with the other two services as well – it's definitely worth trying out their Mac apps, anyway.

An honourable mention must also go to Google Play for its addition of uploading and streaming your own tracks for free. It's a bit of

a no-brainer. After all, there's no reason why you can't do that in addition to streaming music from another service such as Rdio.

FINAL RESULTS

Blinkbox	★★★★★
Deezer	★★★★★
Google Play Music All Access	★★★★★
Rdio	★★★★★
Spotify	★★★★★
Tidal	★★★★★



Competition was fierce, but Spotify is just that bit more refined.

Outlast

A terrifying trek that sometimes veers into repetitive territory



£14.99 Developer Red Barrels, redbarrelsgames.com

Requires OS X 10.9 or higher, 2.2GHz dual-core CPU, see site for graphics cards



It's a setting we've seen before: abandoned psychiatric institution; shady company

performing medical experiments; humanoid monstrosities. This first-person survival horror game seems like a paint-by-numbers scarefest at first glance, but it goes much deeper.

Outlast does a great job of setting the spooky tone right from the start. Arriving at the asylum to investigate a charity gone wrong, journalist Miles Upshur is determined to break the story. Outlast gives the everyman protagonist a realistic ability to fight

(read: none). Miles can't attack or defend, and there are no convenient weapons strewn about. All he has to rely on are his camera and notebook. Miles' trusty camcorder is used to take notes on his surroundings, and its night-vision mode is handy when much of the institution is pitch black, as long as it has battery power.

For the most part, Outlast lets the atmosphere raise the tension with creepy residents, precarious light fixtures, audio cues, and more body parts than you ever wanted to see. It's too bad predictable jump scares add a cheap thrill to an otherwise



Welcome to Mount Massive Asylum. We hope you can run fast.

intense experience. Get ready for a lot of trial and error, as some areas have sparse checkpoints and unclear objectives. You have two options during these sections: run for your life and hope for the best, or bunker down and hide – sometimes for minutes at a time. The suspense of not being able to defend gets old when missions repeatedly use the same structure. **Sarah LeBoeuf**



Outlast is yell-out-loud scary, but the tension is sometimes undermined by a lack of variation.

- + Really scary
- + Great presentation
- Missions can be repetitive
- Predictable jump scares

JumpJet Rex

This guy's rocket boots make other dinos look like a thing of the past



£10.99 Developer TreeFortress Games, treefortress.com

Requires OS X 10.6 or higher



This quirky game stars a dinosaur wearing rocket-equipped boots on a quest to save his

kind from extinction. Pressing a key gives him a short boost upwards, and with well-timed repeat presses Rex gains altitude. His fantastical footwear also enables him to dash horizontally in short bursts, which can also be maintained with well-timed presses. The challenge is to keep Rex moving without crashing into spikes, lasers, sentry robots and other dangers that lie in every which way he can move.

Your main goal is simply to reach the end of each level, which earns you a star. Quotas of stars have to be met in order to open up more levels, and you can earn even more by passing through every gold ring in a level, and for finishing without dying.

Every so often you'll come up against a behemoth whose attacks you must dodge, while you return the favour to bring them to their knees. These are the most fun parts of Rex's adventure. However, the regular maze-like levels require huge patience to memorise their layouts, and they soon feel punishing – part



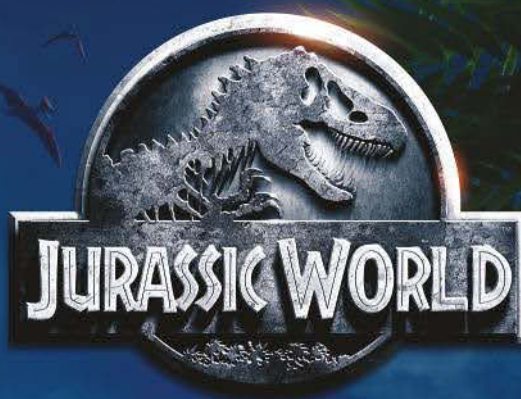
Rex must avoid omnipresent danger as his futuristic footwear propels him to his goal.

of the game's appeal for some, but it isn't just difficulty that might put you off; anyone who has played classic Mario or Sonic games will recall things about their early levels to this day. Here, levels lack that extra pizzazz to make them memorable enough for all but hardcore players to persevere and play levels repeatedly in order to conquer every challenge. **Alan Stonebridge**



JumpJet Rex is cute and cool, but the adorable aesthetic masks almost gamepad-breaking levels of challenge.

- + Nice retro visuals
- + Oh, is it challenging
- Too challenging for many tastes
- Retro music starts to grate



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WB GAMES LOGO, WB SHIELD, TM & © Warner Bros. Entertainment Inc. (p15)



Lifeline...

Help someone lost in space from your Watch or iPhone

★★★★★

£2.29 Developer 3 Minute Games, 3mingames.com

Works with Apple Watch (with iPhone app), iPhone, iPod touch, iPad **Version** 1.2

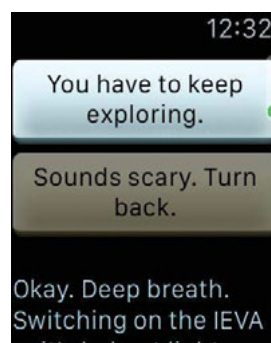


Something that becomes apparent when you have an Apple Watch is that most games created for it don't really work. They're not suitable for how the device is used – they're either ergonomic nightmares or demand play sessions that last too long. However, Lifeline... is an exception, and while it also works well on iOS devices, it's tailor-made for Apple's wearable.

The game starts with you receiving a communication from Taylor, a marooned astronaut. They're keen to survive and clearly terrified, despite a facade of morale-boosting humour. Decision-making is clearly not a strong suit, however, and that's left to you. At certain points in the conversation, you'll get a choice of actions, and Taylor will do what you say.

We've seen this Choose Your Own Adventure-style structure plenty of times on iOS, but this game is lifted by some excellent scripting and the way it plays with time.

For example, when Taylor has to hoof it across the planet's surface, your next communication may not be for hours. And you can't help but wonder what's going on in the interim. The result is an intimate and surprisingly emotionally-charged slice of interactive fiction that will give you a genuine buzz every time you get a tap on your wrist. **Craig Grannell**



Despite simple interactions with Taylor, Lifeline... feels intimate and complex.



Lifeline... is the first of a new breed: an Apple Watch game that's really good. And it's a decent experience on iPhone too.

Forgotten Memories: Altered Realities

Another great reason to never seek asylum in an asylum

★★★★★

£4.99 Developer Psychose Interactive, forgottenmemoriesthegame.com

Works with iPhone, iPod touch, iPad **Version** 1.0.2



The scariest thing about any iPad horror game is knowing you might only be one jump-scare away from an expensive accident. Forgotten Memories has a fair few other tricks up its sleeve too though, borrowing from classic horror games (particularly Silent Hill) for a great looking, though occasionally frustrating, journey into a creepy asylum. The light from your torch casts spooky shadows on the wall. Posed mannequins add a grim touch. And yes, there are monsters in the dark. Of course there are.

As with the games it borrows from, this is often where things go wrong – a mix of sluggish and fiddly touch controls that would rather be on a console controller and a bizarrely outdated save

system where you have to find PCs to create checkpoints. Neither is half as well implemented as the graphics, sound and wonderfully creepy set-pieces, but soon come to overshadow them.

Forgotten Memories does a great job of creating an atmosphere and is a solid horror game. It's a shame it didn't borrow lessons from more recent offerings to smooth out the difficulties of playing it, and allow the intimacy of touchscreen control to bring the horror closer instead of putting another barrier in front of it. **Richard Cobbett**



Okay, we'll be running in the other direction now. Bye!



A genuinely spooky trip to the asylum, but the touch controls make the game less intimate than it could have been.

It wouldn't be Halo without gigantic explosions invading the screen at almost every opportunity.



Halo: Spartan Assault / Spartan Strike

The Microsoft franchise wages war on alien terrain



£7.99 Developer Microsoft, halowaypoint.com

Works with iPhone, iPod touch, iPad



The story of Halo isn't Master Chief saving the Earth from religious fundamentalist aliens; it's about a franchise saving Microsoft's Xbox from the scrap heap. With *Spartan Assault* and *Spartan Strike*, Halo invades the alien world of iOS. These sibling shooters (available as a two-for-one bundle) distil Halo – shooting, driving, shooting while driving – into a tiny package, with mixed results.

Spartan Assault and *Spartan Strike* look and quack like Halo: environments are authentic, guns behave as Xbox veterans would expect and you can even hijack a Wraith tank to rain purple plasma death on the Covenant. But the controls are somewhat ropery: lobbing grenades is an exercise in explosive frustration and switching weapons can become a fatal faff. On an iPhone 5S, text is microscopic and thumbs obscure the view, but there's

plenty of room on the iPad. *Spartan Strike* is more refined, with an interesting story running parallel to Halo 2, but there's little to truly differentiate them.

Both offer bite-sized nuggets of confrontation and track high scores for posterity. They put the 'fun' in perfunctory, offering an enjoyable afternoon's blasting and not a lot more. These games are recognisably Halo yet lack the special sauce of the Xbox series: the compelling space melodrama of Chief and Cortana, the grandiose battles with superior artificial intelligence. You'll be entertained, but may be clamouring for the real thing. **Alan Williamson**

TEAM TALK



Naturally playing a video game built for a console or PC won't be as satisfying on iOS. But it can still be great fun and these games give an exciting hint of the possibilities if Microsoft was to open up more of its catalogue to Apple.



The package is a delightful Halo fix for series fans and an enjoyable distraction for the rest of us.

- + Smart, challenging enemies
- + Authentic Halo experience
- Where's Master Chief?
- Good luck aiming grenades

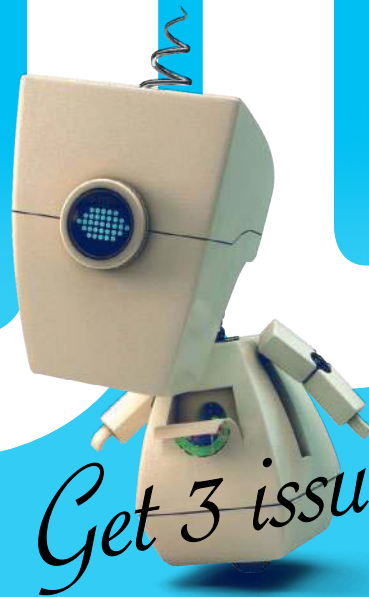
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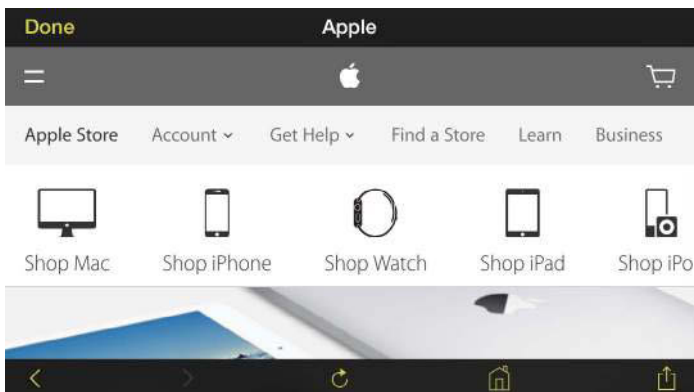
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Setting up site-specific browsers in Marcato is a fast and simple process.

Marcato

Set up secure, site-specific browsers

★★★★★

£2.99 Developer Golden Hill Software, goldenhillsoftware.com

Works with iPhone, iPod touch, iPad **Version** 1.1



Fed up with Facebook's tendrils creeping into his web-browsing habits, Marcato's

developer has aped Fluid for OS X's single-site browsing principle – on iPhone. Within Marcato, each site-specific browser contains its own cookies, local storage and cache and can be locked to a single domain. So you could create several browsers for one site, but with different users, and you don't have to worry about cross-site forgery requests.

Setting up a new browser is easy: tap 'Add custom browser', enter a name and URL, and, if needed, limit it to specific hosts. For example, *.apple.com restricts a Marcato browser to the apple.com domain and related sub-domains; other links open in Safari. Four templates – Gmail, Twitter, Facebook and LinkedIn – are provided. (However, Gmail's template didn't work for us.)

Once a browser is set up, it's available within Marcato or can be added to your Home screen. The process is convoluted (a 'share' button tap, then 'Add to Home screen', which launches Safari, then you repeat the process), but provides faster access to your browser.

Browsers are basic: you get back, forward, refresh, home and share buttons. On an iPhone 5s, the title bar and toolbars make for a cramped experience – a full-screen mode would be welcome. We also found content sometimes took oddly long to load. Still, if you're privacy-minded and want to silo certain sites, this is a good buy. **Craig Grannell**



The browsers are fairly basic, but offer increased security for your iOS device.



An interesting crack at bringing site-specific browsers to the iPhone, and it's approachable enough for everyone.

MIC'D

Sometimes less is more

★★★★★

79p Developer Timothy Hise, micdapp.com

Works with iPhone, iPod touch, iPad **Version** 1.1



One lesser-mentioned use for an iPhone or other iOS device is as a voice recorder. And while the fidelity is never going to be as good as a dedicated pocket recording device, you always have your phone with you.

Mic'd is a simple app that uses the microphone on your device (or indeed any other connected mic) to capture audio. It can be set to start recording on launch, and to split recordings into five, 15 or 30 minute chunks. Recordings can be played back, renamed,

shared to social media or exported to an email or message. There's support for Apple Watch too, though it'll trigger recording or playback, rather than record on the phone. There's no editing and most of what it does is already in Apple's Voice Memos app, though splitting recordings and Watch remote support aren't. **Hollin Jones**



A useful little app if you have an Apple Watch, though quite similar to Voice Memos.

FUSION

Shoot and edit HDR images

★★★★★

£1.99 Developer East Coast Pixels, fusionhdr.com

Works with iPhone, iPod touch, iPad **Version** 1.0



The iPhone's Camera app is capable of shooting high dynamic range (HDR) images, but Fusion promises more control over your images.

For example, while the Camera app allows you to select HDR then shoots three exposures and combines them, Fusion allows you to specify the intervals between exposures (albeit with two options besides auto).

A histogram lets you analyse a scene before you shoot and Steady Shot delays the shot until the camera is

still. Controls for auto-exposure lock and focus lock are included, as well as a spot meter option, while all exposures are saved and can be exported.

Editing includes white balance, sharpness, colour, lighting and the ability to specify parts of the image to be taken from each bracketed exposure. **Kenny Hemphill**



Fusion provides a level of control over HDR images that's usually reserved for DSLR cameras.

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UPGRADE!

Your guide to buying a Mac, iPad, iPhone and Watch

SPOTLIGHT

The Apple kit we're most excited about



The Mac Pro was last updated at the end of 2013 – and what an update it was! It shrank from a bulky – and heavy – tower design to a compact form that you can lift with one hand. Its design is stunning and it's a hugely powerful computer. But if your interests are in the realm of high-end video – we're talking 4K film here – then it's worth getting a few more months out of your current Mac and waiting for a refreshed model.

The Mac Pro is like no other Mac – in looks and expansion capabilities

Expand your horizons

Due to the Mac Pro's size, there's no room inside it for traditional expansion cards, but you can extend its capabilities using Thunderbolt



Mac Pro

DAYS SINCE REFRESH

551

UPDATE LIKELY?

Possible soon

BUY OR WAIT?

Wait if you can

➤ Eschewing the traditional tower design of high-end workstations, the Mac Pro is just one eighth of the previous model's size – standing just 9.9 inches tall – but it packs a lot of power.

Designed around a thermal core that cools its components, the Mac Pro boasts a Xeon processor, dual workstation-class GPUs and PCIe-based flash storage. Six Thunderbolt 2 ports sit at the back, each one providing 20Gbps of bandwidth in one direction and able to daisy-chain up to six peripherals. There are also four USB 3.0 ports and two Gigabit Ethernet ports. Numerous custom options are available.

The Mac Pro is an incredibly powerful computer that'll provide you with astonishing performance for the most demanding tasks – yet it's probably a Mac too far for most users. However, with Thunderbolt 3 so close to availability (see page 6), it's worth delaying your purchase unless you absolutely need the Mac Pro's capabilities right now.

The Days Since Refresh box shows you when an Apple product was last updated at the time we went to press, and whether it's safe to buy now or wait. Please remember this advice is just our best guess – Apple can update any product line at any time.

CHOOSE A MAC PRO

Model	Key specifications	Price
3.7GHz quad-core Xeon E5	Solid State Drive: 256GB RAM: 12GB 1866MHz DDR3 ECC Graphics: Dual AMD FirePro D300	£2,499
3.5GHz six-core Xeon E5	Solid State Drive: 256GB RAM: 16GB 1866MHz DDR3 ECC Graphics: Dual AMD FirePro D500	£3,299

UPGRADE!



MacBook

DAYS SINCE REFRESH

106

UPDATE LIKELY?

New model

BUY OR WAIT?

Buy now

➤ The newest member of the Mac family sports a 12-inch Retina display with a pixel density of 226ppi – almost identical to the MacBook Pro. It's available in the same silver colour as other MacBooks, as well as Gold and Space Grey variants.

Only this and the MacBook Pro feature a Force Touch trackpad, which detects and responds differently to levels of pressure. The backlit keys are larger than on other Macs, and run almost from edge to edge of the MacBook's body.

The MacBook is powered by Intel's new Core M processors (up to 1.3GHz),

which are designed to stay cool without needing a fan, making this the quietest portable Mac. All models come with 8GB of RAM – double the amount that's standard on the MacBook Air – but can't be upgraded any further than that. They also include fast flash storage that starts at a comfortable capacity of 256GB, rising to 512GB in the more expensive version. The 1.3GHz processor upgrade is available on both models for between £120 and £200.

CHOOSE A MACBOOK

Model	Key specifications	Price
12" 1.1GHz dual-core Intel Core M	RAM: 8GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 5300 Solid State Drive: 256GB	£1,049
12" 1.2GHz dual-core Intel Core M	RAM: 8GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 5300 Solid State Drive: 512GB	£1,299
12" 1.3GHz dual-core Intel Core M	RAM: 8GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 5300 Solid State Drive: 256GB or 512GB	£1,249 or £1,419

R = Retina display



MacBook Air

DAYS SINCE REFRESH

106

UPDATE LIKELY?

Recently updated

BUY OR WAIT?

Buy now

➤ The 2015 MacBook Air refresh is a mere speed bump, yet even with the announcement of a new, lighter MacBook, the Air remains Apple's most affordable portable Mac.

The MacBook Air uses Broadwell processors, which are designed to use very little power. The 2015 range's updated graphics chipset is a small amount faster than its predecessor, and its flash storage can reach speeds in excess of 1,000 megabytes per second, which is in the same league as the Mac Pro. The MacBook Air is equipped with 802.11ac Wi-Fi, which is up to

three times quicker than 802.11n, although you will need a compatible router to get that speed. Battery life is awesome, with the 13-inch models lasting up to 12 hours, and the 11-inch Airs running for up to nine hours on a single charge.

CHOOSE A MACBOOK AIR

Model	Key specifications	Price
11" 1.6GHz dual-core Intel Core i5	RAM: 4GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 6000 Solid State Drive: 128GB	£749
11" 1.6GHz dual-core Intel Core i5	RAM: 4GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 6000 Solid State Drive: 256GB	£899
13" 1.6GHz dual-core Intel Core i5	RAM: 4GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 6000 Solid State Drive: 128GB	£849
13" 1.6GHz dual-core Intel Core i5	RAM: 4GB of 1600MHz LPDDR3 Graphics: Intel HD Graphics 6000 Solid State Drive: 256GB	£999

UPGRADE!



MacBook Pro

DAYS SINCE REFRESH

35

UPDATE LIKELY?

Recently updated

BUY OR WAIT?

Buy now

➤ Apple recently updated the Retina MacBook Pro with a brand-new Force Touch trackpad, small boosts to their Intel processors, and upgraded graphics capabilities. The most expensive model is the only one with a discrete graphics processor, which is now an AMD Radeon R9 M370X.

Since October 2013, all but one model of MacBook Pro has offered a Retina display, Thunderbolt 2, flash storage and a lightweight chassis, though the £899 non-Retina model persists. Power savings afforded by the latest Intel processors give the Retina

MacBook Pros a long battery life. The 13-inch model now lasts for 10 hours, and the 15-inch versions for nine hours.

CHOOSE A MACBOOK PRO

Model	Key Specifications	Price
13" 2.5GHz dual-core i5	Graphics: Intel HD Graphics 4000 Hard drive: 500GB RAM: 4GB	£899
13" 2.7GHz dual-core i5	Graphics: Intel Iris 6100 Graphics R Solid State Drive: 128GB RAM: 8GB	£999
13" 2.7GHz dual-core i5	Graphics: Intel Iris 6100 Graphics R Solid State Drive: 256GB RAM: 8GB	£1,199
13" 2.9GHz dual-core i5	Graphics: Intel Iris 6100 Graphics R Solid State Drive: 512GB RAM: 8GB	£1,399
15" 2.2GHz quad-core i7	Graphics: Intel Iris Pro Graphics R Solid State Drive: 256GB RAM: 16GB	£1,599
15" 2.5GHz quad-core i7	Graphics: AMD Radeon R9 M370X R Solid State Drive: 512GB RAM: 16GB	£1,999

R = Retina display



iMac

DAYS SINCE REFRESH

250

UPDATE LIKELY?

Recently updated

BUY OR WAIT?

Buy now

➤ Apple leapt straight to 5K to make the 27-inch Retina 5K iMac the desktop computer to own. In May 2015, Apple reduced the top model's price by £150; it has a 3.5GHz quad-core Intel Core i5 (there's a 4.0GHz Core i7 option), a 1TB Fusion Drive, 8GB of RAM and an AMD Radeon R9 M290X with 2GB video memory. At the same time Apple updated the mid-range 27-inch with a Retina 5K display and new graphics processor. Other models are unchanged, with one non-Retina 27-inch and three 21.5-inch models. All except the entry-level iMac have a quad-core processor.

CHOOSE AN iMAC

Model	Key specifications	Price
21.5" 1.4GHz dual-core Intel Core i5	Hard drive: 500GB (5400rpm) Graphics: Intel HD Graphics 5000 Graphics memory: Shared	£899
21.5" 2.7GHz quad-core Intel Core i5	Hard drive: 1TB (5400rpm) Graphics: Intel Iris Pro Graphics memory: Shared	£1,049
21.5" 2.9GHz quad-core Intel Core i5	Hard drive: 1TB (5400rpm) Graphics: NVIDIA GeForce GT 750M Graphics memory: 1GB of GDDR5	£1,199
27" 3.2GHz quad-core Intel Core i5	Hard drive: 1TB (7200rpm) Graphics: NVIDIA GeForce GT 755M Graphics memory: 1GB of GDDR5	£1,449
Retina 5K 27" 3.3GHz quad-core i5	Hard drive: 1TB (7200rpm) R Graphics: AMD Radeon R9 M290 Graphics memory: 2GB of GDDR5	£1,599
Retina 5K 27" 3.5GHz quad-core i5	Hard drive: 1TB Fusion Drive R Graphics: AMD Radeon R9 M290X Graphics memory: 2GB of GDDR5	£1,849

R = Retina display



Mac mini

DAYS SINCE REFRESH

250

UPDATE LIKELY?

Recently updated

BUY OR WAIT?

Buy now

➤ The smallest Mac in Apple's range finally got a long-awaited update in October. It's a welcome update, but there have been a few odd choices in the components as well. Starting at a new lower price of £399 (£100 cheaper than the previous model), it's still the same shape as before, but with some more modern internals.

It starts with a 1.4GHz Intel Core i5 dual-core processor with Intel HD 5000 graphics, 4GB of RAM and a 500GB hard drive – pretty much the lowest-end iMac without a screen. It's the same kind of power as you get in a

MacBook Air, but without the zippiness of flash memory.

Higher end models bring Intel Iris graphics and the option for a Fusion Drive hybrid storage system, though every option limits you to dual-core processors – a quad-core option is sadly absent. When stepping up to the high-end model (£230 more than the previous model), you get a 2.8GHz Core i5, 8GB of RAM, Intel Iris graphics and a 1TB Fusion Drive, offering more headroom for tasks such as video editing, but it still needs to be accepted that these aren't powerhouses like some other Macs.

CHOOSE A MAC MINI

Model	Key specifications	Price
1.4GHz dual-core Intel Core i5	Hard drive: 500GB RAM: 4GB 1600MHz LPDDR3 Graphics: Intel HD Graphics 5000	£399
2.6GHz dual-core Intel Core i5	Hard drive: 1TB RAM: 8GB 1600MHz LPDDR3 Graphics: Intel Iris Graphics	£569
2.8GHz dual-core Intel Core i5	Hard drive: 1TB RAM: 8GB 1600MHz LPDDR3 Graphics: Intel Iris Graphics	£799



iPhone

DAYS SINCE REFRESH

277

UPDATE LIKELY?

August 2015?

BUY OR WAIT?

Wait if you can

➤ When you're deciding which iPhone to buy, your decision will be driven primarily by what size screen you want. The iPhone 5c (sadly relegated to one capacity, 8GB) and 5s have a 4-inch screens, while the 6 and 6 Plus have 4.7-inch and 5.5-inch screens, respectively; think about how they fit into your life – literally.

There are other differences; the 6 Plus's camera has an image-stabilising lens, and both 6 models are faster.

Rumours began to circulate in May that Apple will announce the next iPhone in August, a month earlier in the year than usual. So, if you're coming up to the end of your contract, you might want to hold off a few more months. At its developer conference in June, Apple announced that iOS 9 will focus on performance, and that it will continue to run on the iPhone 4S, which is already the oldest model supported by iOS 8.

CHOOSE AN IPHONE

Model	Key specifications	Price
iPhone 5c	Processor: A6 Camera: 8-megapixel Video: 1080p, 30fps	8GB: £319
iPhone 5s	Processor: A7+M7 Camera: 8-megapixel Video: 1080p, 30fps/720p, 120fps	16GB: £459 32GB: £499
iPhone 6	Processor: A8+M8 Camera: 8-megapixel Video: 1080p, 60fps/720p, 240fps	16GB: £539 64GB: £619 128GB: £699
iPhone 6 Plus	Processor: A8+M8 Camera: 8-megapixel Video: 1080p, 60fps/720p, 240fps	16GB: £619 64GB: £699 128GB: £789

R = Retina display

UPGRADE!



iPad

DAYS SINCE REFRESH

244

UPDATE LIKELY?

Recently updated

BUY OR WAIT?

Wait if you can

➤ The iPad Air 2 is Apple's thinnest, lightest and most powerful tablet to date. Its A8X processor has a 40% speed boost over 2013's iPad Air. When Apple previewed iOS 9 in June, it announced that new multitasking features are coming to the iPad, enabling you to slide a second app into view (say, to check email) without leaving the one you're working in. However, of the iPad models currently available, only the iPad Air 2 will benefit from the new Split View mode, which will enable you to keep open and work in two apps side-by-side.

The iPad Air 2 and iPad mini 3 feature Touch ID for unlocking the device with a fingerprint instead of a passcode. All models are available in Space Grey and silver, while the Air 2 and mini 3 also have a gold option. Storage capacities in the iPad Air and iPad mini 2 peak at 32GB, while the newest models go up to 128GB.

CHOOSE AN iPad

Model	Key specifications	Price
iPad mini 2 Wi-Fi (add £100 for 4G)	Resolution: 2048x1536 pixels R Processor: 64-bit A7+M7 Video recording: 1080p HD	16GB: £239 32GB: £279
iPad mini 3 Wi-Fi (add £100 for 4G)	Resolution: 2048x1536 pixels R Processor: 64-bit A7+M7 Video recording: 1080p HD	16GB: £319 64GB: £399 128GB: £479
iPad Air Wi-Fi (add £100 for 4G)	Resolution: 2048x1536 pixels R Processor: 64-bit A7+M7 Video recording: 1080p HD	16GB: £319 32GB: £359
iPad Air 2 Wi-Fi (add £100 for 4G)	Resolution: 2048x1536 pixels R Processor: 64-bit A8X+M8 Video recording: 1080p HD	16GB: £399 64GB: £479 128GB: £599

R = Retina display



Apple Watch

DAYS SINCE REFRESH

60

UPDATE LIKELY?

Not until 2016

BUY OR WAIT?

Buy now

➤ Apple Watch has the biggest price range of any Apple product, and goes from one of the cheapest to by far its most expensive. That's because it's more than just another Apple gadget. It's also an accessory, and a fashion one at that. Most won't give the gold ones a second look. But if serious jewellery is your thing then Apple offers that too.

Of all Apple products though, never has a buyer's guide been more needed! A staggering 38 different combinations are available. Apple realises that picking one isn't an easy decision, so stores offer fitting sessions and there are even

dedicated Watch boutiques, just like a real jewellers. The info on Apple's website is a very good starting point, however.

CHOOSE A WATCH

Model	Key Specifications	Price
Apple Watch Sport (38mm)	Cases Silver Aluminium, Space Grey Aluminium	£299
Apple Watch Sport (42mm)	Cases Silver Aluminium, Space Grey Aluminium	£339
Apple Watch (38mm)	Cases Stainless Steel, Space Black	£479
Apple Watch (42mm)	Cases Stainless Steel, Space Black	£519
Apple Watch Edition (38mm)	Cases 18-Carat Rose Gold, 18-Carat Yellow Gold	£8,000
Apple Watch Edition (42mm)	Cases 18-Carat Rose Gold, 18-Carat Yellow Gold	£9,500

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Gary Marshall goes panning in the river of rumour for nuggets of knowledge

Future Force Touch



Apple's been getting awfully touchy of late. Force Touch, its combination of a vibration mechanism and pressure-sensitive force sensors, enables MacBook and MacBook Pro users to feel as if they're using a physical switch instead of tapping on glass, while the same technology in the Apple Watch can tap you or transmit somebody else's heartbeat. And whether it's on your wrist or underneath your fingers, it can also detect different levels of pressure and react to your touch accordingly.

Force Touch is expected to appear in iPhones and iPads, but Apple has even more interesting ideas for your fingers. In its patent application "Touch Surface for Simulating Materials", Apple describes how haptic feedback could be used to "simulate a material" such as metal or wood in a MacBook trackpad. It might even include a thermal element called a Peltier Device to heat or cool the bit that you're touching. Fancy feeling cold, cold steel or hot, hot sand when you play games or book holidays?

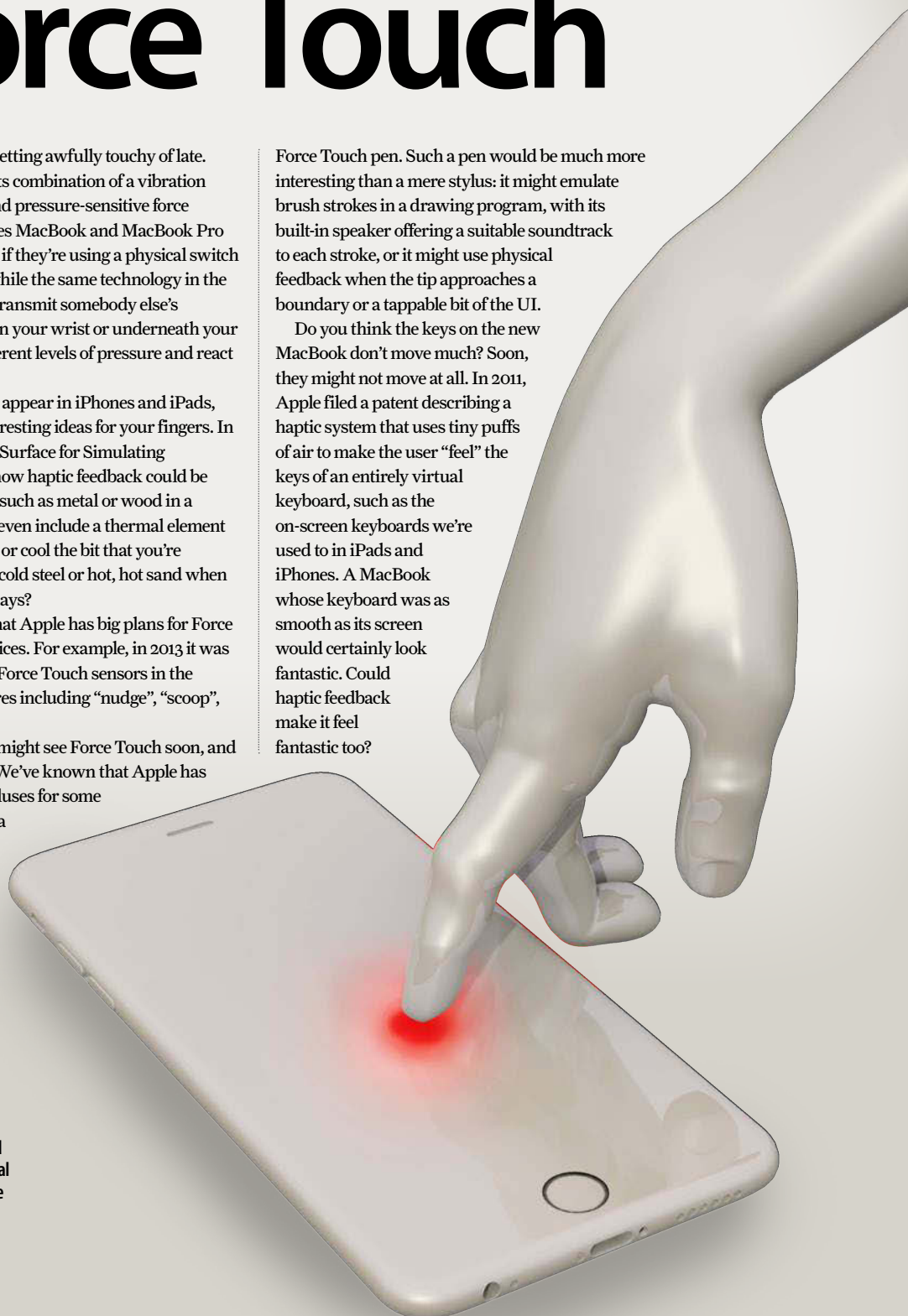
Multiple patents suggest that Apple has big plans for Force Touch across all kinds of devices. For example, in 2013 it was granted its second patent for Force Touch sensors in the Magic Mouse, offering gestures including "nudge", "scoop", "tilt" and "tap".

There's another place you might see Force Touch soon, and that's between your fingers. We've known that Apple has been experimenting with styluses for some time, and in 2012 Apple filed a patent application for a

Force Touch pen. Such a pen would be much more interesting than a mere stylus: it might emulate brush strokes in a drawing program, with its built-in speaker offering a suitable soundtrack to each stroke, or it might use physical feedback when the tip approaches a boundary or a tappable bit of the UI.

Do you think the keys on the new MacBook don't move much? Soon, they might not move at all. In 2011, Apple filed a patent describing a haptic system that uses tiny puffs of air to make the user "feel" the keys of an entirely virtual keyboard, such as the on-screen keyboards we're used to in iPads and iPhones. A MacBook whose keyboard was as smooth as its screen would certainly look fantastic. Could haptic feedback make it feel fantastic too?

Future Force Touch trackpads could use haptic feedback to simulate real materials. They might even change temperature as you touch them.





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